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JOURNAL
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THE BUREAU OF AGRICULTURAL ECONOMICS—THE EARLY YEARS*

LLOYD S. TENNY

FOR three men to attempt to give impressions of the Bureau of Agricultural Economics is a bit like the three blind men attempting to describe the elephant. Much depends on the point of approach each makes. I am not implying that the three of us are blind, nor do I want to give the impression that the Bureau in any way resembles an elephant, although many people would have admitted freely that there were resemblances! Perhaps because an elephant is rather unwieldy and sometimes does not know just where he is going.

I am reminded that once I was in Riverside, Calif., when a circus elephant decided to see the town alone. He ended up on a wild rampage through the grounds of the Mission Inn, finally taking a short course through the barber shop, upsetting plenty of nerves as well as destroying the beautifully arranged bottles of lotions and toilet powders. Those of us who remember the very early days of the Bureau can doubtless see some resemblances. Suffice to say, the Riverside elephant was finally captured and put in his proper place and went along doing his prescribed work. The Bureau of Agricultural Economics also found its place and has done some real and important jobs.

Officially the Bureau of Agricultural Economics came into being by an Act of Congress making appropriation for the fiscal year beginning July 1, 1922. This provided for the merger of the Office of Farm Management and Farm Economics with the Bureau of Markets and Crop Estimates.

In treating of the historical background, I do not care to go much into detail as other factors are more important and much more interesting to this group. Of the major component parts of the

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 10, 1947.

Bureau on July 1, 1922, the oldest was crop estimating. The first appropriation for collecting agricultural statistics by the Department of Agriculture was provided for by the Appropriation Act of February 25, 1863. For the fiscal year ending June 30, 1865, the first distinct and separate provision was made for collecting agricultural statistics, the amount appropriated being $20,000. Regularly monthly reports on condition of crops and annual reports on acreage, yield per acre and production of important crops and numbers of livestock on farms January 1, were begun in 1866. The year 1866, therefore, marks the real beginning of a continuous series of agricultural statistics under the direction of the Department of Agriculture.

This work was gradually developed along the original lines until 1912 when the Crop Reporting Board, which had been organized in 1905, began to forecast production of important crops *prior to harvest*. With the organization of the Bureau of Statistics in 1903 and its reorganization in 1914 under the name of the Bureau of Crop Estimates, definite recognition was made of the value of statistical work in the Department of Agriculture "to the people of the United States—particularly to farmers and stockmen." Thus the Bureau of Crop Estimates continued until it became a part of the Bureau of Agricultural Economics.

Turning now to the field management and rural economics; as could well be expected this work in the Department originated in the Production Bureau. Investigations of farm management and farm practices were set on foot by the Bureau of Plant Industry in 1904. For several years this work was conducted by the Division of Grass and Forage Crop Investigations, under the direction of Dr. W. J. Spillman, in 1905 as agriculturist, and from 1906 to 1916 as "Agriculturist in charge of farm management." In the Agricultural Appropriation Act for the year ending June 30, 1907, there appeared for the first time the phraseology, "To investigate and encourage the adoption of improved methods of farm management and farm practice."

On July 1, 1915, the Office of Farm Management was transferred from the Bureau of Plant Industry to the Office of the Secretary. At this time there were some changes made by relocating lines of work and Dr. Spillman was made Chief of Farm Management. Dr. Spillman resigned in 1918 and Secretary Houston appointed an outside committee to draw up a plan for the reorganization of the

office. This committee made its report, which was accepted, and Dr. H. C. Taylor became Chief on March 8, 1919. The work was considerably expanded and Dr. Taylor remained as Chief of Farm Management until July 1, 1921, when he was appointed Chief of the Bureau of Markets and Crop Estimates. It was not until July 1, 1922 that the full union of crop statistics, farm management and marketing became officially one, with Dr. Taylor as Chief.

It is necessary now to go back once more to clear the picture of the marketing work. The Office of Markets had been created by the Secretary of Agriculture on May 16, 1913, with Charles Brand as Chief. The first appropriation bill was for the fiscal year 1914 which set aside $50,000 for the purpose of outlining the work of the various Bureaus in connection with the marketing and distribution of farm products, to report results already accomplished and to discuss plans for the future development of these investigations. It was on July 1, 1917—again by the Appropriation Act—that the Bureau of Markets was established with an appropriation for the fiscal year of 1918 of $1,718,575. Brand remained as Chief until his resignation June 30, 1919, and was succeeded by George Livingston, who in turn, remained until Taylor's appointment July 1, 1921.

It has seemed wise to give these historical facts, first, to give briefly to this association a short history of the development of Agriculture Economics in the Department of Agriculture, knowing how difficult it is for most of us to carry these details in mind and, second, and more important, to bring to attention for our discussion the rather complicated and involved lines of work that were merged into the Bureau of Agricultural Economics. Naturally there was some opposition toward the advisability of uniting all these lines of work— opposition especially by men in the Bureau of Markets— which was a new and very virile bureau, and a bureau under Brand that was really proud of its work—and rightly so. It had stepped out into new fields—such as market news and inspection of farm crops—and had covered the United States with young and well-trained men and probably by 1920 was the best known and most widely praised Bureau in the Department. It is unnecessary to comment that it had taken a long time to awaken the American farm public to any full realization that possibly something could be done to help farmers do a better job in marketing their crops and livestock. Brand, too, had been the energetic type to sell this idea both to the farm people and to Congress. It was a success. In the

second place, some opposition was created, also, by the manner in which the consolidation was brought about. A committee of outside economists had been appointed. This committee worked largely in a secret manner—at least insofar as the staff of the Bureau of Markets was concerned. The secrecy might have been necessary, and it is a safe bet that had the staff of the Bureau of Markets been aware of the move, a considerable amount of opposition could have been created—possibly even enough to have defeated the plan in Congress. There was quite a decided feeling in the Bureau that it—the largest segment—was being beautifully swallowed up by a group that many in the Bureau never knew existed. I hasten to say, however, that aside from working in the Bureau with a name —"Agricultural Economics"—which was never popular with the market man in the early days, these Bureau of Market men gave very loyal support to the new Bureau and to Mr. Taylor, who proved himself an excellent administrator in the newly-formed Bureau.

But enough of this history. It's far more interesting to discuss some of the problems that were before us in these early days. Naturally my comment will be mostly in the marketing field. It was this work that Dr. Taylor had asked me to handle. Many of the problems were begun long before and were carried on by us or perhaps brought to some satisfactory end. Other problems seemed to be getting themselves always to the front but none more so than cotton standards and grain standards. This was partly due to the fact that the Cotton Futures Act and the Grain Act, both regulatory measures, were old friends to the Department when both Dr. Taylor and I came with the Bureau. This entire paper could easily be devoted to either of these subjects and the details would be most interesting. Under the Cotton Futures Act, the Department controlled the standardization of all cotton offered for delivery on exchange contracts. It also reported cash prices in ten leading southern markets for the different grades and staple lengths and these differentials were by law the differentials that applied in the delivery of all contracts in New York and New Orleans. This brought the Bureau squarely up against one of the great agricultural crops and one in which politics played a most important part. In discussing another phase of our work later, I hope to dwell a little more on this question of politics affecting the Bureau's work.

American cotton had a world distribution. For 100 years more or less Liverpool, England had been the leading cotton market and had controlled most of the international matters affecting American-grown cotton. Liverpool standards had applied for practically all of our "out-of-country" shipments. In disputes, the Liverpool exchange had arbitrated them. This applied not only to cotton going to English mills, but cotton grown and shipped by American firms to France, Belgium, Holland, Germany, Spain, and Italy. Cotton, however, sold in this country and for delivery on the cotton exchanges was subject to American standards and to the Department of Agricultural Classing Boards and to an Appeal Board in the Bureau of Agricultural Economics. By 1921, the American cotton trade was becoming very tired of having its cotton subject to Liverpool arbitration, and of their own volition approached the Bureau on the question of International standards based on our American work which, incidentally, had been done in a careful and scientific manner.

The study of cotton grades is a fine illustration of the early scientific research work done in the field of standardization. The whole story of the acceptance of American standards throughout the world is too long for this discussion but it is enough to say that when Dr. Taylor started out to do a job, it was usually done, and one of the high points in my Bureau experience was when I presented formal agreements on beautiful paper, with the great seal of the Department of Agriculture to the Exchanges in Liverpool, Manchester, Ghent, in Holland, in France, at Barcelona, Berlin, and Milan. Every Exchange officially signed—even though some signed just as enthusiastically as some countries signed the Peace Treaty after the First World War. The important thing, however, is that they did sign and from then until now American standards for American grown cotton has applied throughout the world.

During these early years of the Bureau a great amount of work had to be done on grades of grain. Dr. Taylor deserves much credit for the interest he took in attempting to develop the correct standards for grain, especially for wheat. While the standards were basic to the trading in grain futures, the problem went far deeper than this as the milling requirements were changing. And these new ideas needed by the milling and baking industries had to be reflected in the official standards. Before going too far in developing satisfactory grain standards a complete laboratory had to be es-

tablished for testing grains and for even following the product through the baking processes. I mention this largely for the reason that it shows how far afield apparently the work of the Bureau of Agricultural Economics went and yet how important and closely related were some subjects in so-called pure scientific research to the real economic aspects of the problem, Personally, I feel that this combination of scientific and economic research in grain grades represents some of the finest work done by the Bureau. Many of the same problems or at least similar ones were presented also in establishing grades for fruits and vegetables as well as for grades of livestock and meats. In fact, there was scarcely an agricultural product for which grades were not established, and these all were based largely not only on trade practices but also on scientific studies.

I want here to discuss for a moment one point to which much thought was given and which was not easily solved. The Bureau of Markets had been established and operated almost wholly among commodity lines. Each major crop or closely related crops had its own organization with a strong division leader at its head. The Crop Reporting work was largely handled as one unit. Farm management, however, had several divisions of work based on functional activities. Price studies were carried on largely horizontally covering all fields or crops. Banking studies were separate. Land problems had to be handled largely by farm units or great divisions of the country devoted largely to some important crop, the major one in the territory. Likewise there were studies in taxation which of course had no relationship to special crops. It is easy to see that conflicts might arise over the proper division in the Bureau to engage in some line of research. However, by group meetings of all division leaders and by good administration these conflicts never reached any great importance and so it continues that most standardization work, the inspection and certification work that developed very rapidly, the market news with its extensive wire service which was very important when the Bureau was formed and grew greatly as time went on, all largely continued in the commodity divisions. The other lines of research continued as they had been, but I think that the men at the head of the other lines of work frequently received excellent ideas and advice from some of the commodity leaders.

As one method of marketing there was a division for the study of

cooperative marketing. The Bureau was always sympathetic toward the farmers' cooperatives, but never was it felt that this system of marketing was a panacea for all the farmers' ills. Under Christensen this division of cooperative marketing became more important and many fine studies were made of the cooperative movement both here and abroad. A fine line of historical data were collected and reports were published from time to time.

Here I want to digress long enough to mention one phase of marketing with which the Bureau came in close contact during its early period, namely, futures trading.

The Cotton Futures Act and the Grain Act were on the books at the beginning of the Bureau's history. Futures trading has always been a controversial matter and unfortunately people in general, including the economics staffs in our agricultural colleges, are apt also to be biased for or against; generally against, however. From the days of Dr. Taylor through my administration and, I think, through Olson's administration, the thought was uppermost in our minds to make a careful research study of futures trading but for one reason or another, usually because there was no man available, such a study was never made.

In the light of my experience after leaving the Bureau, during which time I managed a futures trading mart for approximately fifteen years, I am convinced of the advantages that such a market brings, provided it is properly handled. Likewise, I am convinced still of the need of a thorough economic study by the Bureau or by one or more of the outstanding colleges.

The Federal Warehouse Act was another important field of service that developed and was of great benefit to many lines of farming. One could go on almost indefinitely in an attempt to cover the many services and regulatory laws that came to the Bureau.

But time is not available for a further digest or discussion of them. In all these services the Bureau was active and energetic, equipped with a splendid staff of well trained men. Our policy was to be of service and never to attempt to force upon the farmers regulating acts that took the nature of centralized control or a bureaucratic attitude.

In the light of the development in recent years this last statement suggests two more subjects that must be covered if one gets any complete picture of the early days of the Bureau of Agricultural Economics. These are the "Farmer's Intention to Plant Crops

and Breed Livestock" and "Price Forecasts." The farmer is by nature an individualist who wants to handle his farm as he chooses and to plant any crops in any quantity that he desires—this without any great reference to what other farmers intend to do. No over-all production picture had ever been given to aid any producer to know what his competitors were doing except to report what *had been done* as reflected in the reports of the Crop Estimating Board. So, early in the program of the Bureau an effort was made through the crop reporting staff largely, to attempt to find out what a cross section of representative farmers were actually planning to do, compile this data and publish it in time to give the progressive producers an opportunity to adjust their operations if such adjustments seemed wise. Wheat seeding for instance covered a long enough time so such a report if published early could be and was of great value to other farmers. The number of sows to be bred based largely on a comparison with the preceding year was good information. This work was all educational. There was no attempt to enforce the findings and no law on which to base the work. County agricultural agents were brought into the picture by the active cooperation of the Extension Service. It is safe to say that probably no great percentage of farmers was reached but in the light of developments in recent years, the tremendous importance of this early work can be well understood.

The second mentioned line of work fits directly into this same picture. In planning his years's program the farmer needed information about supplies and demand. This means possible future prices. The best that could be done was to supply information about the supplies carried over from one year into the next harvesting period, the amount likely to be available from the new crop, as well as the best information available about demand. This naturally took into consideration the demand for any crop based on the consumer's need and his ability to buy. Of great value was the foreign situation. This included the quantities likely to be exported to foreign countries and also the amount of competing crops likely to be produced in other countries both for their home consumption and for export in competition with ours. In a large degree these facts had to be based on estimates, but the estimates were in turn based on a great amount of personal work both of an office research character and also by men in the field including the men of the Bureau in foreign countries. This work was a bold undertaking and

brought criticism on the Bureau. But it was basicially sound work and pointed the way for a balanced intelligent farm production program. Here, however, is where politics became a problem. If the Bureau indicated in their reports that prices were likely to rise it was fine. Everybody from the farmer to the politician enjoyed these reports. But let the Bureau point out very guardedly even that prices in the future might be lower and if the Bureau was correct, as it frequently was, and prices did fall, then the politicans began to ring our telephone bells. Naturally it was a great compliment to the Bureau that merely by our saying that prices might drop that it results in lower prices. We at least must have been wise. If prices went up we never heard about that but of course the inference would be that we knew what was going to happen and put prices up.

Well do I remember a three-month Senate investigation that followed one of our statements that cotton prices would likely be lower. For us, personally, it was unfortunate that we were right. The Southern Senators and Representatives were plenty hot on our trail, and our one big consolation was that the committee was never quite sure whether our forecast lowered prices or whether Will Clayton—now so large a factor in our State Department—did it by rigging the futures market. But I expect that if you are interested enough to read through the two or three great volumes resulting from this investigation you must decide that we did the evil job. For as I remember it, Clayton came out whole but the Bureau suffered the humiliation of having an important sentence added to its appropriation bill stating that "none of this money can be used to indicate price trends in cotton." As far as I know this language still remains the same in each annual appropriation act.

With one more subject these early days of the Bureau must come to a close. With H. C. Taylor presiding today and with Asher Hobson, President, we must mention the foreign work of the Bureau and this includes not only the regular foreign offices of the Bureau but also the International Institute of Agriculture at Rome, to which both Dr. Taylor and Hobson later became the U. S. Representatives.

Under the rapid growth of the Department of Commerce under Herbert Hoover as Secretary, an attempt was made to transfer the foreign work in agriculture from the Department of Agriculture to the Department of Commerce. The elder Wallace and Dr. Taylor fought hard to retain this in agriculture. They succeeded. If one

fully understood the work of these foreign offices and knew how closely they were in line with the other work in the Bureau of Agricultural Economics, it would have been obvious that these offices should have remained a part of the Bureau. The fight to retain them was worthwhile even counting the casualties caused by the controversy.

I should like to mention many fine men and women who gave splendid service and most loyal support during these early days. Men like Schoenfeld who was in charge under Taylor of research work, Olson who was my lieutenant in the research field and who succeeded me as Chief of the Bureau—both well trained and strong men to aid in the early years of the Bureau's work. Leaders also like Wells A. Sherman and administrators like Kitchen who was then and has always been "tops" in administrative work. To attempt to mention many, however, is beyond the time allotted. It was a fine group of men and women. We worked in perfect harmony. We had a big job to do and we have never apologized for the work we did. Really, we were rather proud of it.

THE BUREAU OF AGRICULTURAL ECONOMICS—THE YEARS IN BETWEEN*

JOHN D. BLACK
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THREE men were chief of the Bureau of Agricultural Economics in the years reviewed in this paper: Nils A. Olsen, from 1928 to May 1935; A. G. Black, from then until October 1938; and Howard R. Tolley, from then until May 1946. Olsen had been Assistant Chief before his appointment as Chief. Black had been Administrator of the Corn and Hog Section of the AAA from 1933 to 1935; and Tolley had been Assistant Chief of the Bureau from 1928 to 1930, then Director of the Giannini Foundation of the University of California until 1934, then head of a program planning section of the AAA, then its Assistant Administrator and finally Administrator in 1936.

An obvious temptation in referring to the years before 1928 which Mr. Tenny has covered in his paper is to refer to them as the "formative" years of the BAE. But it is equally obvious that a mighty lot of reshaping took place in the 18 years following which are covered in this paper. No doubt the reshaping will continue for some time still; but this is for the present Chief to prognose in the third number on this program.

How great the reshaping from 1928 to 1946 can be judged from the fact that the part of the work of the BAE to which Mr. Tenny devotes the most of his attention, and which employed the major portion of his energies, especially before 1926, the regulatory and service work in marketing, was removed completely from the Bureau in the 1938 reorganization. Also at the same time the foreign work to which Mr. Tenny devotes another section of his report was removed, becoming the separate Office of Foreign Agricultural Relations, but with its foreign representatives transferred to the Department of State. Even the Division of Crop and Livestock Estimates was removed at this time, only to be brought back later under the glorified name of Division of Agricultural Statistics. At the time these three divisions were being lopped off in 1938, there was imposed on the Bureau in their stead a large planning, coordinating, and policy-making function. But this began to

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 10, 1947.

be whittled off in 1942, and in 1946 was removed altogether. A stranger by this time may be inclined to ask: What can there still be left in the Bureau? If this paper does not leave the impression of a large and important role for the Bureau in the future, then it will have failed of its objectives to provide a landscape for Mr. Wells' "Horizon."

Very little will be said in this paper about the regulatory and service work in marketing. Mr. Tenny has told about its origin and development both before and after the BAE was organized. As he has indicated, in many ways these activities were the essential core of the early developments in the economic work of the Department of Agriculture. It was around these that the economic work largely grew before 1920, and in lesser measure in the 20's. With these, the economic work had a public appeal which otherwise it would have lacked. The costs of marketing were strongly associated in the public mind with the high cost of living agitation in the Roosevelt and Taft years; and it was this agitation that caused Wilson and Houston to organize the Bureau of Markets. But with the collapse of prices and land values in 1920–21, the public became vitally interested in economics in broader terms of reference, and the new Bureau was able to widen its scope considerably.

The marketing regulatory and service work kept on expanding after 1928. In this expansion, it pretty much followed the lines so well developed in the period Mr. Tenny has covered. Dr. Taylor, Mr. Tenny, Mr. Sherman and the group who worked on grades and standards, inspection, warehousing, price quoting, and market news in these years developed most of the techniques still in use. Progress since has mostly consisted of taking advantage of new developments in communication and new scientific techniques. Within another year or two, the technique of communication may be developed to the point that market news can be transmitted in any volume desired almost instantaneously over the whole world. This will create the need for worldwide grades and standards and market inspection.

This writer is much of the opinion that all this regulatory and service work now belongs outside the Bureau administratively. But he is equally strong in his belief that it needed very much to be in the Bureau in its early years. At this stage, it needed the kind of an integration which economists only could provide. The Henry C. Wallace who came to Washington in 1921 as Secretary of Agricul-

ture had an unusual comprehension of the fact that the maladjustments of the then postwar years were economic in character. He called upon his Bureau of Markets and his Office of Farm Management for economic facts and explanations, but he did not get what he wanted. Asher Hobson no doubt recalls how he was called to Washington hurriedly to get together some data on marketing spreads and margins. The writer spent two months in the BAE in the summer of 1921, and another five months in the summer of 1922, and sat in many of the weekly staff conferences. The lack of economic sensibility displayed by the marketing men who had been brought in by Charles Brand was astounding at times. They had been chosen because they knew cotton or wheat or potatoes or oranges, and not because they knew markets and marketing. Livingston, chosen to succeed Brand, was an agronomist, and very shortly found himself at odds with the new Secretary. Mr. Tenny has mentioned the resentment of Brand's marketing men at being placed under the direction of economists; but they required such direction in these formative years if their programs were going to fit into the economy, and before long most of them came to recognize this.

It perhaps needs to be added that although these activities now belong outside the Bureau, this does not mean that the Bureau has no concern with them. If such regulation and services are to improve, they must be analyzed constantly. The publications of the BAE from 1922 to 1938 contain frequent reports of studies designed to improve market grades and standards, inspection and market news. An administrative group separated from the BAE may carry on the research needed to improve these services, but it may also become almost wholly absorbed in their routines.

Similarly, this paper will devote little space to the crop and livestock estimating. It surely belongs in the same administrative unit with the other data-collecting and analyzing work of the BAE. It continued to improve after 1928, but most important of all, it was able after 1933 to break out of its routine and render large service to the AAA and other branches of the Department. But it has before it still greater avenues for growth. The renaming of it as the Division of Agricultural Statistics was highly important. It is a fair statement that up to 1930, the crop and livestock estimating of the Bureau kept pretty well abreast of the new developments in statistical science. This can scarcely be said of it since. We need an

integration of the activities of this Division and of the Census Bureau around the techniques of modern sampling that will eventually largely revise the present methodology of both units. Once this methodology is developed, we shall be able to obtain a coverage of current developments in production, land use, tenure, rural housing, and family living comparable to those which were long ago developed in marketing and prices. Probably one needs to add that under production in the foregoing list is here meant something much more comprehensive than reporting acreages, crop conditions and yields.

It needs to be strongly emphasized at this point that the kind of reporting and summarizing of reports that constitutes the bulk of the old-line types of crop and livestock estimating can also have a highly routinizing effect on the section chiefs of such a Division as well as can the regulatory and marketing services, and that this needs to be guarded against all the while. It tends to develop the kind of mental habituation that has come to be referred to as "the crop-reporter mind." To the well-habituated crop-reporter mind, a state average is a state average whether or not it has any value or meaning or possible use. If agricultural statistics are to serve their high purpose, they must be in such form as to furnish the materials for one of the most important types of economic research, namely, analysis of current economic developments. They must therefore be in terms that economists can use in such analysis. They must therefore also provide data in form so that public agencies and private firms can use them in the conduct of their affairs.

Probably as good an example of the monstrosity that the crop-reporter mind can create is to be found in the field of farm labor. If information on the need for and supply of farm labor is to be of use to employers and to employment offices, it must be assembled by local markets and for particular operations in particular weeks on particular crops or livestock. It is now being collected in that form on the Pacific Coast, but not by the BAE. What the crop and livestock estimating service reported, until stopped by the Bureau of the Budget's statistical office, was state averages by months of the percentage of normal supply and percentage of normal demand. Any real economist would of course have known that these were two ways of asking the same question. And they so proved to be except for very abnormal situations and vagaries in reporting. That some of the crop reporters would still resurrect this series if they

could is evident from a recent article in the *Journal of the American Statistical Association.*

Possibly the foregoing remarks will be misunderstood unless it is specifically restated that they apply only to crop and livestock and similar estimating and not to many of the activities now carried on in the offices of the state statisticians, such as, for example, here in the state of Wisconsin. Some of these offices also perform in a measure functions even like those described below under "A, analysis of current economic change." performed on the federal level in the research divisions of the BAE.

The phases of the BAE programs of the 1928–46 years to which the rest of this paper is mainly devoted are, A: The analysis of current economic developments, already referred to; B: The policy function; and C: The planning function.

A. Analysis of Current Economic Developments

It is one thing merely to collect data of current change and assemble it census-fashion in tables; it is another to combine these data with those of other years and areas, and with data on related circumstances, and arrive at conclusions as to what is really happening and the reasons for it. Both are often called research. A better statement is that the first is necessary only as a basis for research. The second can be research of the highest order. The Bureau has done a vast amount of this kind of research since 1928. Some there are who look at this kind of research carelessly or refer to it contemptuously as counting sheep or foxholes, not discovering the excellent analysis that may accompany it. The Bureau itself has been somewhat responsible for this misjudgment of it work. Too often in its annual reports and presentation to budget officers has it referred to such activity merely as "fact finding," or as "collecting and disseminating economic information." When it has gone beyond this, it has used the phrase "interpreting the data," which suggests to some persons the notion of reading of one's biases into them. Let us, then, be absolutely clear on this point, that a thorough and objective analysis of the data of current change can be the highest order of economic research.

The question then follows: How fully has the Bureau over the years availed itself of the opportunities to analyze the data of current change which it has assembled? The answer is: Only in a small way at first, but increasingly from year to year. Such analysis

really began about the time that agricultural index numbers began to be constructed. The studies begun in the 20's of factors affecting prices of farm products and the attempts to forecast price movements were milestones of progress. The launching of the outlook program in 1923 was another milestone. The developing of the outlook program from then until the middle 30's called for better and better analysis of the current data. But even before 1930, the Bureau had passed beyond the stage of being satisfied with an annual inventory and projection and had begun to make periodic reviews and projections during the year. Today, the annual outlook analysis and report is only a minor part of the whole undertaking. The great burden of the task is the preparation of the series of periodic commodity and other situation reports. Perhaps not all of us realize that these have largely replaced the annual outlook reports.

In the war years, this type of analysis took on a new form, namely, determining production goals. The BAE, with Sherman Johnson in immediate charge, worked out the goals the first year, and developed the methods and procedures since followed in the main. This activity may well be continued indefinitely and be greatly improved as we employ sampling methods to give us better and more complete production data.

Some of you may also have gained the impression that price analysis and forecasting—like that for cotton and hogs which raised such a rumpus around 1927 to 1930—is likewise only history. The truth more nearly is instead that as more knowledge of prices and marketing was gained, and more data were assembled, the simpler naive analysis of the 20's came to be replaced by fuller and more realistic analyses of the sort that give the conclusions appearing in the present situation reports.

In these few paragraphs, I have dealt hastily with what is by all odds the major function of the BAE. Probably four-fifths of the actual budget of the BAE will be devoted to collecting and analyzing the data of current change. No other thing is half so important for the Bureau as successfully integrating the collection and the analysis of such data. This section of this paper can be properly concluded with the dedicatory statement from the writer's book *Food Enough*, published in 1943.

This book is dedicated to a company of working economists—especially in the Bureau of Agricultural Economics, without whose untiring services

to the nation it could never have been written. They make the reckonings and plot the course from month to month of every flow and current in the restless stream of agriculture. Without their charts, the administrators would be no more able to navigate than a mariner with a compass but no readings of latitude or longitude. Without their readings and their projections, no one who talks and writes about agriculture could safely venture much beyond the first meridian.

B. The Policy Function of the BAE

No argument is needed that any decisions on matters of public policy and program are dominantly economic in content and that much of the rest of the content is political. It therefore follows that the Bureau must have a large part to play in such decisions. The Bureau functioned in this role very easily, directly, and informally when Henry C. Wallace was Secretary of Agriculture and Henry C. Taylor was Chief of the Bureau. It did not function in this way readily when Jardine was Secretary of Agriculture, nor when Hyde was Secretary. With the arrival of Henry A. Wallace on the scene and the appointment of A. G. Black as Chief of the Bureau, the informal functioning of the Wallace-Taylor period was resumed. This informal arrangement was made formal, superficially at least, in Secretary Wallace's memorandum of October 6, 1938. From then on until Wickard became Secretary, the Bureau and the Secretary's Office went through a good many of the motions at least of joint decision on matters of policy and program. Of course, the Secretary had final responsibility for all the decisions, but in most cases he approved what was recommended by his Agricultural Program Board, and the Program Board approved in the main what had been proposed first by an interbureau coordinating subcommittee set up by the Bureau. With Wickard's ascension to the Secretaryship, the connection became increasingly tenuous. Secretary Wickard was largely unable to use any kind of policy-making machinery. Meetings of the Program Board came to be useless. Wickard came to fear a meeting of the Board, even a memorandum from the BAE. The buddies whom he brought in from the AAA did not help the situation any. The action which in effect pushed the Bureau largely out of wartime policy and program making on the local level was Wickard's setting up the county defense and war boards under the AAA rather than under the county planning committees.

No doubt most of those present are familiar with relevant analy-

sis in Gaus and Wolcott's *The Administration of the Department of Agriculture.* These two men concluded that the Department very much needs a "general staff" to assist it in its policy and program decisions, and that the Bureau should be that general staff. In fact, they presented the formal arrangements set up in October 1938 as the end-result of an evolution that began back in Houston's Secretaryship when he attached the Office of Farm Management directly to his Office, that grew apace under Henry C. Wallace, and matured under Henry A. Wallace. The writer recalls a visit of Gaus to Harvard, while he was working on his study of the Department, at which he presented the foregoing thesis to a faculty seminar in the School of Public Administration. The writer also remembers taking vigorous exception to this thesis on that occasion and in particular stating that he doubted whether the Bureau would really be allowed to function as the Department's general staff; that even though the final coordination in program-making was largely an economic and political process, the other bureaus and agencies in the Department, particularly the so-called action agencies, were not ready to admit this and to accept the Bureau in such a coordinating role; and that it would also meet objections from the farm organizations and the state extension services. His anticipations have clearly proved to have been well founded.

No one can say that Tolley and his central coordinating staff did not try hard to perform in the role outlined. If any one doubts, let him read the 1939 and 1940 annual reports of the Chief of the Bureau. If fault there was, it was more likely on the side of too great pressure to get the coordinating process in full operation. The revisions in thinking and in ways of doing things that the new setup called for were truly large. One could not expect these revisions to be made in a few months. Instead, strong leadership, supported by firm pressure from the Secretary's Office, would be needed over a period of five to ten years. If Tolley was importunate, let us recall that he had just come from the administering of a very large action agency that made annual programs and then saw that they were carried out, with the help of penalties for non-compliance; and that he did not ask for this assignment and was not even consulted with respect to it—in fact, had no intimation of it until it descended upon him out of the sky on the morning of October 6.

Tolley of course also had doubts as to whether Wallace would really support such an undertaking; and decided to test this out

early before it was too late. Wallace gave as good support as could be expected perhaps the first year. Rarely after that did he bring as much pressure as needed on his Washington agency and bureau heads to get them to carry out into the field the decisions reached at the Program Board sessions. Then as opposition developed, he relaxed his pressure still more. Still, it is possible that if Wallace had remained Secretary of Agriculture and had continued such support as he gave in 1939 and 1940, and the war had not intervened, the role assigned to the Bureau would have been increasingly realized over the next ten years. That the state and county extension services were very definitely swinging into step was evident to the writer in his hundreds of interviews with workers in the different federal and state agencies while conducting his field studies in January–September 1941. The strongest opposition was from the local state and regional staffs of the Soil Conservation Service and its districts, many of which had come to look upon the county planning committees as rivals of the soil conservation districts. This situation was surely something that the Secretary of Agriculture needed to adjust.

Even though the policy-making and coordinating task assigned the Bureau in 1938 was one that needed to be performed, and the Bureau would in time have encompassed it with proper support, the question still remains as to whether the Bureau should have this assignment. It is, and has been from the start, the writer's firm judgment that the Department of Agriculture needs a strong general staff, *but that the Bureau should not be that general staff*. He supported Tolley and his Bureau in every way he could once the assignment had been made, but he always believed that the assignment should never have been made.

The compelling and sufficient reason that the Bureau should not be the general staff of the Deparment is *that it cannot safely mix this function with that of collecting and analyzing the data of current change, and with the other research which it very much needs to do*. We must therefore have a Bureau solely for these latter functions. The general staff should be attached directly to the Secretary.

Does this mean that the Bureau should be isolated from the Secretary's Office and from policy making? By no means. It should follow policy and program matters as closely as possible. It should assemble all pertinent data and information bearing on policy and analyze them as closely as possible. It should assemble all possible

economic data as to how the different programs of the Department are working out, and weigh and evaluate them. It should even go so far as to predict in detail how alternative program proposals will work out. *But it should not undertake to choose policy, nor even to say what will be the best policy.* This latter is a function of the Secretary.

It follows from the foregoing that the Bureau and the general staff must work together at all times, the Bureau frequently making analyses and preparing reports on special assignments, but not restricting itself to these. How much the Bureau will need to do will depend in large part upon the size and strength of the general staff. Never yet has it been adequately manned to handle its tasks.

You may inquire at this point as to how in fact the Bureau has worked with such a general staff as the Department has had. The answer is pretty much as just outlined, but in a relatively restricted way, especially from 1928 to 1935. In the years while A. G. Black was Chief of the Bureau, a large fraction of its energies was devoted to assembling and analyzing the data needed to enable the Secretary's Office and the AAA to carry on. The Bureau, for example, did a large part of the work of figuring out the AAA quotas. It provided information needed for drought relief and all the other emergency undertakings. It assisted similarly in the development of the production goals in the early years of the war, and in connection with the price support program of the AAA and ceiling program of OPA.

Final reference under this head needs to be made to the postwar planning analysis undertaken by the Bureau from 1943 on. Obviously this was a highly proper assignment of the Bureau. But it must be added that the Bureau's planners over-reached themselves somewhat in spots in their series in *What Peace Can Mean to the American Farmer* and went so far as to take a definite position on price-support levels and other matters. This is probably equally true of their "reconversion program for the Cotton South." An objective analysis of all possible alternatives would have been entirely in order; but not an analysis *which appeared to leave the country with only one feasible or sensible course of action.*

This statement on policy-making and the BAE follows a different line than that of Dr. Charles Hardin in his article on the BAE. But it does not clash with it. Hardin's analysis is highly pertinent. Hardin is right that if the BAE had taken a position in 1944–46 on price supports and other matters that was highly acceptable to the dominant political and agricultural leadership, it would not have

run afoul of this leadership. But this writer insists that it would have been equally severely attacked by other groups. The point here being made is that the BAE must analyze problems so that it can properly be attacked by neither. Its objectives in analysis must be to bring out all aspects of a policy question and put these in logical relationship. *If it does not yet know how to do this, then it must learn how.*

C. The Planning Function

The issues raised by the reorganization of 1938 go beyond the simple matter of policy-making that has been emphasized in the preceding sections. The Bureau was at the same time given the assignment of developing a program of planning on the local as well as the national level. This is clearly stated in the following paragraph from the Secretary's memorandum of October 6, 1938.

> It is imperative that we establish over-all planning work for the whole Department in order to provide for proper functioning of the many new activities authorized in recent years by the Congress. . . . This has become all the more necessary since the Department last July entered into a significant and far-reaching agreement with the Land-Grant College Association. Under this agreement, the colleges and the Department are establishing democratic procedures that will give farm people an effective voice in forming, correlating, and localizing public agricultural programs. Farm people and official agencies in the States are now forming community, county, and State groups to carry on land-use planning and program building. In the expanded Bureau of Agricultural Economics, the Department is now establishing its part of the machinery needed to integrate State and local planning and program-forming activities within the Department.

The agreement with the Land-Grant College Association referred to is of course the Mt. Weather Agreement. This had been developed in 1937–38 under the Department leadership of Milton Eisenhower working with the policy committee of the Land-Grant Association. It was conceived as a means by which activities of the federal action agencies and the agricultural extension service would be integrated at the local level and thence on up to the top. The county was to be the key unit in the undertaking. The work in any county was undertaken in three stages, described as follows in the 1939 report of the Chief:

> Three major lines of planning work in the counties are known as preparatory work, intensive planning work, and unified county programs.

Preparatory work, designed to acquaint county agents and local planning committees with the scope and objectives of land use planning and to prepare them to engage in this work, has been inaugurated in about 830 counties. Intensive planning work, involving area mapping and classification and the formulation of immediate and long-time land-use plans and adjustment goals for the county, was undertaken in 447 counties representing the major type-of-farming areas in each State. Forty-four counties in 39 States have been selected, and 2 other States have tentatively selected counties for the development of unified county programs. The remaining States are in the process of selecting unified-program counties. Unified country program development involves the translating of land use plans into action. It involves coordination and revision of existing departmental, State, and local programs, and the formulation of new programs to best achieve recommended adjustments in land use and rural institutions.

A year later the Chief of the Bureau was able to report that county planning was at the *unified* stage in 61 counties, at the *intensive* stage in 544 counties, and at the *preparatory* state in 933 counties. In addition, state land-use planning committees had been set up in 46 States. The objectives of the program could be even more clearly stated at this time under four heads:

"(1) More effective and economical ways of adapting public agricultural programs to diverse local conditions within States, counties, and local areas;
"(2) Better coordination of the several Department action programs as they are carried out in the field;
"(3) Clarifying the working relationships of the Department and Land-Grant colleges in light of the new responsibilities placed upon the Secretary of Agriculture for the administration of action programs;
"(4) Attacking the farm problem on all fronts simultaneously."

By 1940, it is clear from the 1941 report, these county planning committees, now set up in 1900 counties, had begun to turn their attention from the foregoing objectives to "the immediate problems raised in their particular localities by the defense program." One of the activities commonly undertaken was mobilizing the farm labor resources, a county farm labor subcommittee being set up for this purpose. The report of this year is almost wholly devoted to the Bureau's part in the national defense program; and the 1942 report fails even to mention county planning.

An inquiry conducted by the writer a year ago indicated that the county planning organizations had completely disappeared in some of the States and in others had functioned more or less along with

the county war boards and were still alive but not very active.

But we cannot safely conclude from the foregoing experience that the objectives of county program planning were ill-conceived. The several proposals now before Congress for various forms of reorganization of federal and state activities are clear evidence to the contrary. Instead, the objectives were excellent, but *the mechanism was wrong.* It is the writer's judgment that the major fault with the mechanism was at the top. County program planning should have been initiated in the Federal Office of Agricultural Extension and not in the Bureau. Of course that Office was not then, and never has been equal to such an assignment. But it should be strengthened so that it is. No one thing is needed more than this in our whole governmental setup in agriculture. Given a proper setup of interbureau coordinating committees operating on the federal level, under the wing of the general staff of the Department, and county and state committees sending up plans for integrated action on the local level, these to be reviewed and harmonized with federal action, the basis can be laid for a gradually evolving procedure of integrated action on both local and federal levels. The county and state committees must include representatives of all the federal agencies operating in the territory, and of course the local farm leadership. The Extension Service should take the leadership in setting up the Local program boards, but it should not generally dominate them. What they propose should grow out of full and free discussion of all alternatives. Neither should they be generally dominated by any one, "action agency." The chairman should generally be the best available individual in the county.

Something more effective than the old Program Board is needed at the top. There must be an actual operating unit on the Secretary's staff with authority to carry out the agreed-upon lines of action. An actual operating unit is also needed on the local level. Possibly, for example, the soil conservation district should be renamed something like the "county executive agency," following the British precedent, and given a greatly expanded program of action.

But an even more serious difficulty with the whole undertaking was its very comprehensiveness. It really undertook to do too much all at once. The people in the counties were very far from ready for full-scale comprehensive county-wide planning. They had mostly not reached the stage of planning their own individual farms, forests, recreation areas, marketing enterprises, credit enterprises,

etc., when they were suddenly asked to plan adjustments for a whole county as a unit. The Agricultural Extension Service is now promoting a program of farm planning over the whole country. The farm foresters of the Norris-Doxey program are beginning to reach the forests. Perhaps five years from now, enough of such planning for individual operating units will have been done in many of the counties so that it will be possible to discern the shape of the adjustments needed in different segments of counties, and how best to secure these adjustments. The Agricultural Extension Service will then be ready to take part in a program of program planning on a county-wide basis. It had better begin, like the 1938 one, with land use, and later reach out to include housing, marketing, transportation, health, education, and the like.

The role of the Bureau, and of the economists in the states, with respect to such a program will be to: (1) help develop the techniques, first, of individual unit planning and later of county-wide planning; (2) supply the information and analysis upon which planning and subsequent readjustments must be based; and (3) sit in council with the county, state, and national program boards whenever plans come up for review. The second of these will be a large order. It calls, for example, in the case of farm planning, for full-scale production-economics analysis such as outlined in the most recent textbook on *Farm Management*.[1] It also calls for similar full-scale analysis of market organization, market prices, market outlets and trends in demand and supply.

The remarks just made call to mind that Mr. Tenny's presentation includes nothing of the important developments in the BAE in the early years in the field of farm management except to speak of Dr. Taylor's coming to Washington in 1919 to take over the Office of Farm Management. Secretary Henry C. Wallace was no happier over the farm management work he found in the Department than he was of the marketing work. The writer spent his five months in the BAE in 1922 working mostly on its farm management program. The BAE's program in this field at that time consisted largely of two things: conventional farm business surveys, and cost routes. Secretary Wallace called the writer over to his office the day after he arrived and stated his position on these in no uncertain terms. He stood up and pounded his desk hard as he said that his farm man-

[1] *Farm Management* by J. D. Black, Marion Clawson, C. R. Sayre, and W. W. Wilcox, New York, the Macmillan Company, 1947.

agement staff "must find something better to do than collecting a lot of cost and other figures on some farms in an area here and there or he was not going to keep on asking appropriations for it." When asked what he wanted instead, he said he did not know, but it "must be something that would help a farmer in planning his business," and "above everything else, adjusting it to the constant changes in the outside world."

One of the practical problems confronting the farm management staff was salvaging from the farm survey and cost route data already collected some materials that would meet the Secretary's specifications. The first tangible result of that effort was the Pond-Tapp bulletin on farming in Southwestern Minnesota. Another was the Ezekiel-McNall study of dairy farming in Wisconsin.

The more positive efforts, however, centered around the development of farm budgeting techniques, under the leadership of J. B. Hutson, and the assembling of data that could be used in testing out alternative farm setups as a basis for recommended adjustments to accompany the demand and price pronouncements of the annual Outlook statements. First M. L. Wilson, and later H. R. Tolley, took the lead in these new developments; and in the last 12 years, Sherman Johnson has promoted them with all the resources at his command.

One has to admit that the objectives in farm management stated by the first Secretary Wallace have been somewhat slow in realization. But out of them grew the farm-and-home plans on which the standard rehabilitation loans—over a million of them—of the FSA have been based; later the more careful plans on which the Jones-Bankhead tenant-purchase loans have been based; the planning of the unit-test-demonstration farm plans of the TVA, and in lesser measure the conservation plans of the SCS. And now as the last and most significant of all developments, again under M. L. Wilson's leadership, the undertaking in the Agricultural Extension Service to extend farm-and-home planning into every county in the land. The actual farm planning done by these agencies has in most cases been far from adequate; but it has been in the right direction and needs only to be elaborated.

There are other phases of developments in 1928–46 that could be considered in detail if time allowed. One of these is the setting up of regional offices and then closing them out on orders from Congress. If the Bureau alone had set up regional offices, and not as part of

county planning, probably no question would ever have been raised. The easiest way to get regional offices established is to start with agricultural extension and let the states in a region largely set up their own regional offices. But the time for that is a bit in the future.

Another phase is the broadening out of the field of the Bureau to embrace more of social science. It is unlikely that Congress will see fit, at least for many years, to set up separate Bureaus to handle the political science, sociology, social psychology and anthropology aspects of agriculture. Nevertheless, these have important contributions to make to agriculture if we interpret agriculture *as meaning people as well as crops and livestock*. These subjects therefore need to find at least a temporary home within the Bureau of Agricultural Economics. Much progress was made in this direction after 1933, largely due to the ever-broadening influence of M. L. Wilson. The most conspicuous achievement of this description was the project in opinion or attitude polling conducted by Dr. Rensis Likert. This, and all the other gains in this field, have gone by the board for the time being. Even the sociology work, with which the new ventures were affliated, has suffered from its contact with them. The largest gap is in the political field, and here about all that was accomplished even at heyday was a broadening of the work in land economics to include more of the institutional.

In conclusion, we must agree that the years under review were indeed strident ones for the Bureau. A lot of experience was had in a short time. Let us hope that we have learned from this experience what are the wrong ways in which to lead off in the direction of progress and carefully avoid them in the future. But let us not despair of progress.

TRENDS IN WORLD FOOD ECONOMY*

ALBERT VITON
International Emergency Food Council

THE decision of the Farm Economics Association to devote to the international picture the entire opening session of its 1947 Conference is, I believe, very significant. I have not traced the Association's programs as far back as World War I; but I find that the first 10 annual meetings after 1930—and you will admit that going back to 1930 represents a great deal of research for a bureaucrat—were devoted exclusively to national agricultural affairs. Land utilization, farm mortgages, the New Deal in agriculture, conservation, the ever normal granary—these were the issues which loomed in American thinking and these were the issues to which the Association's opening sessions were devoted. Since 1940 at least one paper has been presented at every opening session which dealt with world framework in which American agriculture operates. But this is the first time that the whole opening session is devoted to the international scene—and that, I venture to believe, is most significant.

It is symbolic of the change in American political thinking and of the fundamental changes in the American economy, both farming and industrial. The U.S. economy has become more interwined in the world economy than in the past, and this applies also to the agricultural sector. Cash payments to farmers, including the value of farm products consumed by their families, is estimated to have amounted to 23.8 billion dollars in 1945 and to 27.2 billions in 1946, and exports (excluding military shipments for civilian relief) amounted to 2.3 and 3.1 billions, respectively. The U.S. dairy industry, the rice industry and, above all, of course, our wheat farmers have come to depend on foreign markets to a considerably larger extent than before 1939. Foreign countries took 32 per cent of the greatly increased 1946 rice crop, and about ⅓ of the phenomenal wheat crops of 1946 and 1947.

The increased world demand for U. S. farm products is a result not alone of war devastation. There are longer range forces at work, which, if given free play, will mean more abundant living for the whole world. The next decade will witness fundamental changes in the world pattern of industrial and agricultural production, and,

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 8, 1947.

therefore, in the pattern of international commerce. Politically the U. S. has assumed world leadership; the question is whether it can do the same in the economic sphere. The interesting thing is that, in part at least, the economic difficulties of the moment and the economic energies and promises of the future are not unconnected with the basic socio-political forces in the world which the U. S. has helped to stimulate.

Unfortunately, I am afraid that the magnitude of the changes in world forces and of the change in the U. S. world position, and their implications for our national economy are not yet fully realized. I venture to believe that the next 10 years will witness a great increase in attention in our agricultural schools not only to such fields as comparative international agriculture and comparative agricultural policies but to the relationship between U. S. agriculture and the general world economic complex, international trade and even to international relations as such.

There is no need to devote much time to the prospects for the current and the coming crop year. American agriculture will have a ready world market for all the grain, rice and fats and oils it can produce. Importing countries will use their last dollars for these commodities even if they should have to curtail drastically their other urgent imports. Since the end of the war supplies of other foods have improved steadily, although slightly, in all European countries except Great Britain; but European and other importing areas will not be able to dispense with U. S. grain, rice and fats and oils during 1948 and probably 1949. The cereals shortage in 1947–48 will be more serious than at any time since the outbreak of War.

Imports of about 32 million tons of bread grains are needed by deficit countries even to maintain the current rations and to allow very slight indispensable improvements in operating stocks. But present estimates place the total exportable supplies of all grains at about 28 million tons—and this total, which, in my opinion, may prove somewhat optimistic, includes about 6 million tons of what used to be called "feed grains."

Equally critical is the fats and oils outlook. Total world supplies in 1947 are estimated at 10.5 million tons as compared with an average of 12.8 million tons in the prewar years. But these global figures hide the depth of the regional changes that have taken place in production and consumption. Before the war, the annual production of Europe (including the U. K.) of all visible types of

fats and oils amounted to about 4.2 million metric tons, and net imports averaged about 3.7 million tons. In 1947 indigenous production is estimated at 2.6 million and the present allocation allows imports of only 2.5 million tons (including butter). Highly significant for the future is the steep decline in the quantity of fats and oils moving in international trade. While about 5.1 million tons moved in international trade in the prewar years, in 1947 less than 3 million tons will be available for export. Hence the tragic decline in consumption of many European countries. In only a few deficit countries will consumption exceed 75 percent of prewar. Certain it is that for 1948 and probably 1949 there will be sufficient effective demand to absorb—even under financial duress—at remunerative prices all the fats and oils that the American farmer can produce.

Cereals and fats—these are the hard-core of the international food problem, and in cereals I include of course rice. Production of other commodities—of meat, dairy products, sugar, beans and peas—in Europe and Asia is still 10 percent to 20 percent below prewar. The shortage of cereals, which has made it necessary to divert feed grains to human food, and the decline in supplies of protein feed concentrates, have effectively delayed livestock rehabilitation. There is no possibility of regaining prewar level of production of livestock products before 1950, at the earliest. Unfortunately exportable supplies of meat in 1949 will probably be even lower than this year. Any improvement in European meat consumption in 1947–48 will come from forced liquidation of livestock between now and the next harvest—with the inevitable effects on production in the following years. Indeeed, one of the great problems of the coming years is how to increase the exportable supplies of high protein feeds. About 8 million tons moved in international trade during the prewar years; it is doubtful whether as much as 2 million tons will be available for importing countries in 1947.

It is less possible, however, to foresee the effect on demand for other agricultural commodities. The demand will certainly be there. The world will be in a poor position to dispense with U. S. cotton, tobacco, dry fruits, dairy products, etc. But it remains to be seen whether the financial arrangements will be made to enable the world to effect the transition from war to the type of economy it is groping for without undue sacrifices in immediate consumption—in brief, whether we will advance the capital to help finance the transition and at the same time begin such reorientation in our

domestic economic policies as to enable the world to repay in future years the capital advances. I believe that the world will work itself out of the present crisis to a higher level of economic activity. The questions are: (a) how deep the sacrifices will have to be during the next few years; (b) how long the period of crisis will have to be; and (c) what will be the relationship with the U. S. during the crisis and afterwards.

However, it is not with the immediate prospects that I want to deal. Rather, my purpose is to evaluate the forces which appear to me to operate today, the effects of which will gradually unfold themselves over the coming years. The specific effects of these forces on the U. S. economy, and in particular on agriculture, will be mentioned later. My thesis is that the world is at the beginning of one of those epochs in the history of man when a new energy appears to enter into his activities, when the pace of evolution is quickened and processes which normally require decades of development are compressed into as many years—and, in contrast to the situation in the third decade of this century, this intensified energy will express itself not only in the industrial field, but in agriculture as well. Modern economic history knows two distinct periods of quickened progress and accelerated growth. One was during the second half of the 18th century; another era of dynamic evolution took place at the turn of this century. My thesis is that we are entering another epoch of accelerated economic activity, when the mills of the gods turn with more speed and to more definite purpose.

To attempt a precise delineation of the circumference and ramifications of the new forces would be folly. But this much precision can be ventured, I believe. First, the rate of increase in the total economic activity of the world will be considerably higher during the coming decade than during the decade before the outbreak of World War II—and that, in spite of the dislocations introduced in Europe by the destruction of Germany and in the Far East by the momentous political changes which are now taking place.

Second, the rate of increase in economic development will be particularly higher than during the base period in countries of the middle stages of industrial development, or below. Finally, industrial development will go hand in hand with efforts to secure expansion of agricultural production, and that a relatively higher

level of agricultural prosperity will be maintained through the higher demand for food and through the withdrawal of labor into non-agricultural occupations.

The first, although perhaps not the most important factor to be considered, is that world population increased by about 10 percent during the past decade, and that rate of increase is continuing. Food production has of course also increased. But not to the same extent. On the contrary, the only significant increases in food production have been on the American continent, and especially in the U. S.; production in Europe and Asia—which account for the bulk of the population increase—has declined. Excluding the U.S.S.R., an increase in production of about 15 percent would be necessary to enable the countries which have suffered a decline in standards of food intake to regain the prewar level, and to allow retention of the wartime gains by those few nations which have been able to improve food consumption standards.

An increase in population need not, of course, mean by itself a higher effective demand for food. In the past, indeed, no correlation existed between growth of population and the effective economic demand for food. But I venture to submit to you that the population factor is of greater significance today than ever before. Profound cultural, ideological and political changes have taken place which give entirely different colors to the traditional economic factors.

There is no need to trace here the origins of the reformation or to evaluate the causes which brought it about. No doubt, various schools of socio-economic thought have been of influence; more telling, perhaps, may have been the impact of the experience of the war, especially since that experience came after the long blighted thirties. But whatever the causes, a new socio-economic philosophy has attained domination in many countries, and this philosophy will shape the economic structures of nations. No field of human endeavor will feel its influence more profoundly than the field of agriculture.

The new economic philosophy can be summarized with one phrase—full employment: that it is the function and responsibility of government, to use the language of the famous British Statement of Policy, to maintain "a high and stable level of employment." Even today, though beset with immediate problems that flow from insufficient production and insufficient labor, the policy of full em-

ployment colors to an amazing extent the economic thinking and planning of overseas countries. It has become the foundation stone of public finance, of foreign trade policy and of all domestic economic policies. It is very significant that a draft of the I.T.O. charter which the U. S. Department of State submitted to the London Conference ran into extremely heavy weather until the U. S. delegation accepted provisions concerning full employment. The policy of full employment means that a minimum level of economic activity is to be maintained even if it necessitates government direction; and, therefore, a minimum level of nutrition and social welfare. It means then that a floor is placed to consumption, and especially food consumption.

I have dwelt at length on "full employment" because I regard it as the most dramatic symbol of the new economic orientation. But it is only one part of this new philosophy. Family allowance legislature recently enacted in Britain, Canada, and the Antipodes Dominions; extentions of social insurance—all these, and many other manifestations might be mentioned. But these are essentially passive. They merely place a floor on consumption. It would be a grave error, however, to overlook the more dynamic expressions of this ideology. There is a great increase in awareness of the importance of increasing productivity—or rationalizing industry, of making agriculture more efficient, of improving marketing systems. In fact it is the slowness, real or imagined, of private capital to attain these objectives that is driving so many countries to seek salvation through governmental direction, planning and enterprise. In Britain, the chief argument in favor of nationalization of basic industries was not "ideological," as the worthy *Times* would have one believe; but the shameful neglect of private capital to provide the leadership for dynamic increase in productivity per man-hour. In colonial and semi-colonial countries, a very large proportion of the industrial and agricultural expansion projects, launched or planned, is under direct governmental supervision.

One of the most significant features of the new socio-economic orientation—both in its passive and in its dynamic aspects—is that the major beneficiaries are the lowest income groups. This stands in bold contrast to previous experience, especially as far as colonial and semi-colonial countries are concerned. The effect will be that the proportion of the increased income devoted to food will at least keep pace with that devoted to industrial products. No doubt the

proportion will tend to diminish after the incomes of these groups reach a certain level. But that level is still out of sight, and at present the rise in income of the lowest social groups expresses itself in a demand for more and better food.

In part this is due to the enhanced consciousness of the importance of good nutrition. For the first time hundreds of millions of people have become aware of the connection between food and growth, good health, efficiency, and even emotional stability. During the war years, every major government used considerable resources to popularize nutritional ideas; and the effects of the propaganda are becoming increasingly visible.

In this connection the influence of rationing should not be underestimated. We all know that rationing fixes a ceiling on the quantity of the rationed item each one may consume; but it is equally true that rationing also establishes a floor on consumption. Innumerable dietary surveys have demonstrated beyond a shadow of doubt that the establishment of a ration acts, in the overwhelming majority of cases, almost as a social obligation to consume the permitted quantity. In country after country, the lowest income groups—which in the past fared or feasted as chance provided—have learned to expect of society an assured dietary minimum which is considerably higher than that which, on the average, they had before the war.

Most significant of all, these changes are no longer confined to the West. All the cultural, economic and sociological changes which I have mentioned, have penetrated, for the first time, into dark Africa and Asia. Nutrition in Africa, foresooth; Shades of Sir Garnet. But the change has come about, whether we like it or not. Symbolic of the new era was the publication on the eve of the war by His Britannic Majesty's Government of a two-volume report entitled "Nutrition in the Colonial Empire"—an astounding document both by reason of the facts which it revealed and by reason of the new attitude which it symbolized.

As in the West, the introduction of rationing has had profound social effects. For the first time since the Pharaoh who knew Joseph, government has assumed responsibility for feeding hundreds of millions of human beings. Starvation has ceased to be the unalterable fate of tens of millions. In India no less than 175 millions enjoy the protection of rationing; and today a breakdown of the rationing system would be tantamount to a collapse of the whole socio-politi-

cal fabric. One needs only to listen to Indians talk of the Bengal famine to realize the magnitude of the change. Interestingly enough, men who are now at the head of the Indian government have told me that they expect rationing to continue for at least ten years.

It is frequently overlooked that the present acute shortage of cereals and fats and oils is due in part to increased consumption in colonial lands and so-called "backward" territories generally. Production of groundnuts and other oil-bearing plants (for direct food-fat consumption) has not materially declined in India as compared with prewar; but exportable supplies will be in 1947 less than a third of the prewar average. I venture to predict that the Indian government will permit even less exports next year. The same thing has happened in Latin America, in the Near East, in Africa and in Asia. The experience of Mexico is typical. In an average prewar year (1935–38) Mexico was self-sufficient in grain. To be exact: it imported 23,000 tons of wheat and flour per annum and exported 8,500 tons of coarse grains. Now look what has happened. Indigenous production of all cereals was actually higher in 1945 and 1946 than before the war—2,350,000 and 2,830,000 respectively as compared with the prewar annual average of 2,160,000 tons. Yet in 1945–46 Mexico imported 378,000 tons of all cereal, 335,000 tons in 1946–47—and in both years it tried hard to obtain twice the amounts it was allowed to import.

What has happened? The answer is that many things have happened. (A) The peoples of the so-called "backward" countries of the world have become more productive. Industrialization has progressed, and the per capita output of wealth is increasing at a rate unprecedented for those countries. (B) The great masses of peasants and laborers have learned to expect more of life; and among the things which they have most learned to expect more of is food. (C) Governments have assumed obligations towards economic development and social welfare unheard of before the war.

Nor are these changes of an ephemeral nature. Let us have no illusions about the possibility of a return to the status quo ante—which has been translated by a colored preacher to mean "the mess we was in." On the contrary, the governments and peoples of these lands have become conscious of their backwardness, of the vast distances they have to cover, and are attacking their problems with unprecedented determination and vision. Long-range development

planning, embracing both agriculture and industry, has become the order of the day. And let me emphasize that the basis of these plans as far as agriculture is concerned is not production for export to meet the needs of the dominant Western countries—and at very low prices in relation to the volume of man-hours—but production for better living, for better nutrition and for social welfare.

The series of Colonial Development and Welfare Acts enacted by Britain since 1940—and especially the significant Act of 1946—are symbolic of the new activity. Much work to improve agriculture and nutrition has already been done in the West Indies and other territories, although the accomplishments to date pale into insignificance in comparison with the magnitude of the needs. All British colonial territories have been instructed to prepare ten-year development plans, and more than a dozen have already been prepared and approved by the Colonial Office. Similar changes are taking place in other empires. The Netherlands authorities have been at work on very ambitious plans for the East Indies; a Belgian economic development mission left for the Belgian Congo only a few weeks ago, a number of French economic development missions have prepared reports on the French African colonies. As to the governments of these colonial territories which recently attained autonomy, there is no need to point out that each and everyone of these places economic development in the forefront of its activities.

There is one other development, which is world-wide in scope and the full ramifications of which we are not yet in a position even to outline. I will not be surpirsed if in the future we will come to see in this change a major transformation in our economic—and perhaps even social—values. Whether in the U.S., or Britain, or the European Continent, the greatest percentage increase in wages since 1939 has gone not to the professional, not to the white-collar groups generally, but to coal miners, agricultural laborers, textile workers, and to the other heavy-duty occupations which before the war were the lowest paid. I am aware of course that this is a typical phenomenon of an inflationary period. But I am convinced that due in part to the operation of the forces mentioned previously, the realignment in economic values is more than a temporary circumstance. Within the national economies this change has meant a change in the economic center of gravity in favor of workers by hand; international, the transformation is expressed in a deep change in the "terms of trade" in favor of the countries exporting

food and industrial raw materials—in favor, in other words, of the typical colonial economies.

As far as agriculture is concerned, this change is of enormous importance. High prices in relation to non-food merchandise will probably call forth in the long run an increase in production; but the emphasis must be, due to factors which I need not eleborate here, on the long run. In the meantime more visible will be effects on the demand for food. The gap is enormous, and it will not be filled for many a year.

There is another economic development which I would like to mention, although it has no direct bearing on the main thesis—namely, the increasing tendency of countries to insist on processing their own primary agricultural products. The decline in exportable supplies of high vegetable protein feeds, to cite one example, may be much more significant than is yet generally realized. The same development can be observed in other commodities. If this trend is substantial, and I believe it is, it obviously will spell significant changes in the pattern of international trade in agricultural commodities, and profound changes indeed for many countries.

The crying need of the world always has been for more physical production. But the calls of the last war have spread the know-how, and the demand for the rewards of greater production, into places where they would not have penetrated for decades under peacetime conditions. This weltgeist finds expression in both the political and economic spheres. Politically it constitutes the fuel for the many movements for self-government which are bubbling and boiling around the globe.

True, the turmoil which results hinders production and trade for the moment. But, if the Nations can find the way to harness the chain reaction of human creative impulse which had followed from the initial fissions of World War II's cataclysm and direct it to production instead of letting it senselessly dissipate itself in civilization's final catastrophe, a third world war, we can see in the last half of the Twentieth Century a world-wide outsurge of invention and physical production. As far as agriculture is concerned, I am convinced that the demand for food will remain for many years above supply availabilities, although the demand is calling forth and will continue to call forth extraordinary efforts to increase production.

If this conclusion is valid, it means that we must reorient our

thinking. Today we are ridden, consciously or unconsciously, by fears of surpluses, of over-production, of the bottom dropping out of the market. If I may use the language of the psychologist, these phobias are a fixation—a carry-over from the years of the 30's.

However, the world panorama which I have attempted to paint—with rapid and coarse strokes, to be sure—needs refinement. My analysis had proceeded on the assumption that we will have a "one world" economy. But over us hangs the ominous threat that in the future, instead of a "one world economy" we shall dwell—and I am speaking in economic terms, not political—in two or in three worlds. The clearest expression of the economic division is the dollar famine which looms so greatly today. I believe that the forces that I have attempted to outline could still remain valid even if two or three economic universes were to emerge. But their impact on U.S. agriculture would be totally different. In brief, it is by no means impossible that even for the basic commodities—and sooner for other agricultural products—U.S. may labor after the 1949 or 1950 harvest under burdensome surpluses while farmers in other countries enjoy high and profitable prices and are unable to meet the whole of the effective demand.

How to prevent such a calamity is one of the major problems of economic statesmanship. I am convinced that it can be prevented—but I must hasten to add that as yet I see few and very weak signs of realistic efforts to make the necessary adjustments to the potentialities of a rapidly expanding world economy. Loans, relief appropriations, Marshall plans are important and necessary. But, from a long range standpoint, they alone are insufficient unless backed up by the necessary changes in U.S. trading policies—changes in tariffs, quotas, and other trade barriers which will make possible a wider and a freer exchange of goods. Unless so backed up, the loans, the grants, the Marshall plans will only reduce the period of crisis and the amount of belt-tightening foreign countries have to make without solidifying world economic integration. From the standpoint of U.S. agriculture, the loans, Marshall plans alone only postpone the day when a substantial part of its world market disappears, and when it has to make an adjustment to produce more largely than now for the domestic market.

This is not the time to outline the changes in U.S. foreign trade policies which would be necessary to maintain a one-world economy —with or without the U.S.S.R.—and at a high level of production

and employment. The I.T.O. charter will not suffice. The problems are complex and not all can be evaluated as yet. But I believe that, if my analysis of world forces is correct, one of the implications is that the proportion which agricultural commodities would contribute to the total U.S. exports would be higher than was the case during the thirties.

It took Britain five to seven decades to make a similar adjustment in its economy during the 19th century; the tempo of today demands that we accomplish it in as many years a transformation much more worldshaking in its implications. This places an unprecedented challenge to American scholars, who are not burdened with all-absorbing, although not always all-important problems of day-to-day administration. Only after careful study, analysis and thought can there be wise and far-sighted policies and administration. The challenge is a twofold one. It is first of all of research, analysis and thought in the privacy of one's study; it is, secondly, to take the results of the research and thought to the market place.

SIGNIFICANCE OF THE GENEVA TRADE CONFERENCE TO UNITED STATES AGRICULTURE*

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SINCE 1914 the governments of the world have shown great ingenuity in inventing and applying new forms of trade restriction, many of which were not even mentioned in economics courses when I was a college student. Under the influence of the economic fear engendered by the Great Depression of the early 1930's, reinforced and complicated by European Totalitarianism, we have seen the development of higher tariffs, export subsidies, countervailing duties, quantitative restrictions and quotas, bilateral agreements, British Empire preferences, foreign exchange restrictions and other barriers, until a large part of the benefit of foreign trade has already been lost. Furthermore, restriction is still increasing about as fast as ever. Under these conditions it would be very strange if the adoption of a handful of trade treaties and the establishment of another international organization would suddenly reverse the whole process and establish that paradise of international laissez faire which is so devoutly hoped for by our students of foreign trade. If we can even stop the deterioration, we shall have cause enough to be thankful. Really to liberalize the conditions of trade will still take a long, uphill pull.

In this paper I should like, first, to comment very briefly on the recent development of trade barriers that resulted in calling the Geneva Conference. Second, I will say something about the history and organization of the Conference itself. Third, is the attitude of the nations regarding reductions in their import duties. And fourth, I should like to comment on the Charter of the International Trade Organization. No one of these subjects could be dealt with adequately in the few minutes available here. The purpose is, rather, to sketch the general picture in broad strokes and to stimulate further discussion.

Recent Growth of Trade Barriers in Agriculture

Why has there been such a great increase in trade barriers during the past two or three decades?

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The first influence causing the erection of such barriers has been the underlying spirit of protectionism, which we generally find among farmers as well as most other groups of producers. Second, is the wide fluctuation in business activity and prices since 1914. Especially important was the depression of the early 1930's. Third were the foreign exchange difficulties in which many nations found themselves from time to time since World War I. Fourth, we should mention political uncertainty and the resulting urge to self-sufficiency as a military measure. Of course, this classification is not altogether satisfactory. These groups of influence are more or less related to each other. And there are minor or less common influences that have not been mentioned. Nevertheless, I think that most of the imposed restrictions can be traced to one of these four factors.

The propensity to protectionism is ages old and world wide. It is a commonplace observation that entrepreneurs try to avoid *competition*, especially competition from abroad, if it is possible for them to do so. Of course, virtually everyone favors the removal of trade barriers as a general principle. But there is nearly always an exception—the article which the particular farmer or manufacturer is selling. Few producers can view with pleasure the prospect of adjusting their enterprise to a new price structure, especially if this involves lower values of some of their important products. Foreign competition appears particularly dangerous and menacing. This is all the more true because very few producers are acquainted either with foreign price structures or with the conditions and costs of production in other countries.

Opposing this tendency to protectionism are the desires of some groups of producers to get cheaper raw materials, and of consumers to obtain supplies at lowest possible prices. Consumers' demands, however, are widely diffused and no ordinary consumer buys very much of any one commodity. On the other hand, producers groups are often strongly organized and work persistently and effectively to obtain higher prices and higher incomes.

At the end of World War I, and again during the depression of the early 1930's, the general propensity to protectionism received strong psychological reinforcement from sharp declines in prices. It is true that the depressions of these years have seldom been attributed to any flood of imports. Nevertheless, high tariff protection was one of the principal measures advocated as a remedy for falling prices by farmers and by politicians both here and

abroad. Consequently, there were sweeping tariff increases as in the Fordney-McCumber Act of 1922 and the Smoot-Hawley Tariff Act of 1930. Similar increases occurred in many, probably in a majority of other countries, at about the same times. These boosts in duties, however, did not stop with the depressions, but have continued to the present day.

The depression of the 1930's had other consequences, as well as higher tariffs. Since it made producers in free enterprise countries fearful for their economic security, many governments sought more positive means than tariffs to prevent foreign competition. Thus, import quotas or licensing systems were adopted in several of the European countries, as in France, Germany, Italy, and Czechoslovakia. Various types of subsidies or price supporting measures were applied in most of the same countries to insure producers' income. Out of 22 leading nations examined in a recent study by the Office of Foreign Agricultural Relations, thirteen had some form of import quotas or licensing by the outbreak of World War II. A fourteenth joined the ranks in 1940.

The most serious blow to expansion of United States trade came from British Imperial preferences. Under the Ottawa agreement of 1932, England and its Dominions granted each other lower tariff rates than those charged against other countries. The intention was to stimulate trade within the Commonwealth and to bind together the Dominions and the mother country. The same arrangements, however, placed the United States, as well as other non-Empire countries, at a serious disadvantage in dealing with those in the agreement.

Many other discriminatory, bilateral trade or clearing agreements were also made during the depression and the years immediately following. Frequently, blocked currencies were employed for definite amounts of specified commodities. During the late 1930's Germany made agreements of this type with most of its neighbors and with several countries in Latin America.

In many of the agricultural exporting countries various systems of export subsidies were adopted. Dairy products exported from Australia and New Zealand, fruits exported from Australia, grains exported from Australia and Argentina, are illustrations. In many cases domestic prices were maintained at levels above the world price. The resulting double, or rather multiple, price levels for the same commodity frequently provoked retaliation, complicating and

exacerbating a world trade situation that was already bad enough.

Foreign exchange difficulties comprise a third source of restriction, as mentioned a couple of pages back. During the early 1930's many countries adopted discriminatory use of scarce foreign exchange, conserving it and doling it out for those purposes considered most essential. As an example, Argentina developed a system with five different rates. One was the open market rate. In addition, there was a relatively favorable and an unfavorable rate, each, for buying and for selling the dollar or other exchange. The Central Bank sold foreign exchange at a favorably low rate, in terms of pesos, if it were to be used for importing machinery, raw materials, or other "essentials," while discouraging "non-essential" imports through an unfavorable rate. On the opposite side, foreign exchange was purchased at a favorably high rate in terms of pesos from those exporting industries which the government wished to encourage, while a lower rate was paid for dollars or pounds obtained by exports which the government wished to discourage. Argentina is used merely as an example. Many other countries did essentially the same thing.

The important thing to note is that the depression-born device of exchange control was soon modified into a tool for domestic intervention in planned economies, incidentally with further impediment to international trade. By the outbreak of World War II, foreign exchange was under close and discriminating government control in a majority both of the European and of the leading Latin American nations. By the end of the war, the controls had been made much tighter and were being used by virtually every country in the world.

The current exhaustion of foreign buying power by several key nations (the so-called "dollar scarcity") implies that this form of restriction will continue for at least a few years.

The fourth source of trade barriers mentioned above was the political or military urge to national self-sufficiency. In this connection, we think of the "Battle of Wheat" in Italy, beginning in 1925, and of the strenuous efforts of Germany and of France to increase their grain production in the face of relatively high cost conditions.

Before 1939 efforts to attain self-sufficiency were made chiefly in Europe as measures for military safety. After the outbreak of war and the interruption of shipping, however, the alleged need for self-sufficiency was advanced pretty much all over the world, first

as an argument to justify subsidies and various other devices to stimulate home production. Later on, the same arguments were frequently used to keep out competing foreign supplies for protectionist purposes. Often efforts to attain self-sufficiency are considered to be justified by little more than a nation's emotional desire to be "independent" of others. A responsible official of a Latin American government told me, quite seriously, that the chief agricultural foreign trade objective of his country is to become completely self-sufficient in production of each and every food product it consumes.

With the outbreak of war in 1939 all governments, including that of the United States, increased their control over agricultural production. Subsidies or guaranteed prices to producers, import and export quotas and licensing systems, foreign exchange control, and state trading were applied almost universally in addition to import duties.

We shall have occasion to refer to state trading again later on. It was, of course, a relatively old device. Since the revolution of 1917 it had been used for all of the foreign trade of Russia. Also, there have been many national tobacco monopolies, salt monopolies, and so on. Many new government trading agencies were set up during the depression of the 1930's, and still more were established to obtain supplies of critical materials during the recent war.

As a few illustrations of such agencies, we may mention our own Commodity Credit Corporation, Rubber Reserve and similar wartime agencies, and the U. S. Commercial Corporation. In Brazil there were a number of agricultural "defense" organizations which were authorized to deal in coffee, cacao, yerba mate, sugar, rice, meat, and tobacco. In Argentina there was a Grain Board and a Meat Board during and since the depression, and there is the present Trade Promotion Institute. In Canada and in Australia there were wheat pools. In New Zealand and South Africa, there have been various governmental agencies charged with supervising agricultural exports, sometimes with guaranteed prices. In Mexico and Colombia there are national agencies to purchase and distribute essential imported commodities. Most European countries have various governmental monopolies or agencies to purchase and distribute imported supplies. The Norwegian Grain Monopoly was intended to import needed supplies, but at the same time to buy from domestic producers at prices which were sometimes above

the world market. In Argentina, on the other hand, the Trade Promotion Institute buys grain from producers at low prices, sells abroad at the full world price, but sells to local consumers at prices even lower than those paid to producers.

In various countries these state trading agencies have powers to buy from producers at relatively high prices and sell abroad at lower market prices, to destroy surplus coffee, to levy export taxes in order to obtain operating funds, to loan funds to producers, to set quotas for production and for export, to operate processing plants, and so on.

It should be noted, again, that these agencies are all instruments for implementing national policies—tools of planned economies. But wherever they intervene in international commodities, they remove another "degree of freedom" from world trade.

By the end of the war international trade was virtually in a strait jacket. Although many wartime restrictions have now been revoked, the devices just mentioned are still in use in many countries and will be hard to get rid of. This is all the more true because so many of them lend themselves so readily to use as tools of protectionism.

When agricultural surpluses again appear, we may expect producers in a great majority of countries to demand that their governments raise tariffs still further, grant them continued subsidies, utilize exchange control a little longer as a means of excluding competing imports, conclude new bilateral agreements in order to open up or to retain markets, and continue to engage in state trading when that promises to obtain larger returns. It was the purpose of the Geneva Conference to try to avert this spreading paralysis, and if possible, to turn the remaining free enterprise nations back toward unrestricted private trading. This is clearly essential if the world is to obtain anything like the full benefit of international comparative advantage.

Organization of the Conference

In February 1946 the United Nations Economic and Social Council resolved to call an International Conference on Trade and Employment to promote production, exchange, and consumption of goods. This Conference, according to present plans, will be held in Havana in late November of this year. A Preparatory Committee consisting of 19 nations was appointed to work up an agenda for the Conference and to prepare a draft-charter for an International

Trade Organization to promote these objectives. This was done at a meeting of the Committee in London in October and November 1946. The latter was revised by a Drafting Committee, which met in New York in January and February 1947. Later, it was presented to the second session of the Preparatory Committee, which began in Geneva on April 10, 1947.

In addition to work on the draft charter, it was decided to hold negotiations, also at Geneva, in order to conclude a multilateral trade agreement among the members of the Preparatory Committee. The trade agreement negotiations were intended to constitute a positive step toward the lowering of tariffs of the principal trading nations and the removal of some other trade barriers with the least possible delay, even in advance of the operation of the International Trade Organization.

Nations participating in the Conference at Geneva are: Australia, Belgium, Netherlands, Luxembourg, Brazil, Canada, Chile, China, Cuba, Czechoslovakia, France, India, Lebanon and Syria, New Zealand, Norway, Union of South Africa, United States, and United Kingdom. Russia was also a member of the Preparatory Committee, but is not participating in the Conference.

The division of the Conference which is working on the Charter consists of representatives from each country delegation, and is broken down into a series of sub-committees dealing with the various chapters or subject matter headings. The division which is carrying on the trade negotiations is composed of groups of negotiating teams from each country delegation, together with their various advisors. In the United States Delegation there are about ten negotiating teams, some of which deal with more than one country. The entire Delegation consists of representatives of the Departments of State, Commerce, Agriculture, Treasury, Labor, War, the Navy, and the Tariff Commission. The United States Delegation is headed by Will Clayton, Under-Secretary of State for Economic Affairs. The work on the Charter is under the direction of Clair Wilcox, and the trade negotiations are under Winthrop Brown, Chairman of the Trade Agreements Committee.

The trade negotiations consist of two distinct steps. The first stage, now nearing completion at Geneva, consists of bilateral negotiations between pairs of governments, and is closely patterned after the reciprocal trade negotiations which we have been carrying on since passage of the Reciprocal Trade Act of 1934. Second, all

bilateral agreements are to be combined into a single multilateral instrument in which all concessions agreed to between pairs of countries are to be extended to all the other negotiating nations. Still later it is intended that additional nations may likewise negotiate with the Geneva nations, and upon satisfactory conclusion of such negotiations, may receive the benefits of the tariff reductions provided in the multilateral agreement.

In the bilateral discussions each negotiating team requests certain reductions in the import duties of the country with which it is dealing, and in exchange makes tentative offers of reductions in the tariff of the government which it represents. Until the bilateral agreement is concluded, each negotiating team is free to withdraw any offer it has made if it thinks that counteroffers are too far out of balance with the value of concessions that it has proffered.

There are actually 19 states involved. The Belgium, Netherlands, and Luxembourg customs union, however, acts as one unit, and the Lebanon-Syrian customs union acts as another. Thus, there are actually 16 units negotiating. There are 120 possible pairs of bilateral negotiations. But since trade between some of the small and widely separated states is negligible, there are actually slightly under 100 negotiations in progress. Nevertheless, this is the most comprehensive and, incidentally, the most complicated trade negotiation in the history of the world.

It may be useful to review a few of the principal limitations to the United States offers. In the first place, the amount of reduction offered in any negotiation is limited by the Trade Agreements Act to 50 percent of the existing duty, except in a small number of special cases. Second, negotiations are limited to those commodities on which public hearings have been held. Third, the offers made by any negotiating team must previously have been approved by the Trade Agreements Committee and by the President. Thus, there is no chance of the United States Delegation taking the bit in its teeth and, for some perverse reason, suddenly setting out to wreck the tariff structure of the United States.

The Tariff Negotiations

At the time this paper is written it is not known just what reductions in tariff rates will finally result from the Geneva Conference. It is safe to say that in the long run, American agriculture, as well as other industries, is likely to benefit materially from the many

concessions obtained. It is also safe to say that no concessions granted by this country are likely to cause any great losses to American farmers. Among the concessions granted by other countries some will represent relatively large percentages of the present duties paid by our products; others will be relatively small. Some of these concessions will apply on important and others on minor export items. Some will be concessions by countries that constitute large markets, and others by countries that buy relatively little of our farm products. Thus, it will require some little time after the negotiations are concluded before we can fully analyze the full results of the Conference in terms of probable shifts in trade and prices.

Since we are negotiating with 15 other economic units including 18 countries, the total number of concessions given and received directly should be quite large. Further, since all tariff reductions or other benefits agreed to between pairs of countries are to be generalized to all the other countries concluding negotiations in this Conference, we will receive many added concessions indirectly.

Still, I repeat, we should not be overly optimistic. We should not expect a sudden upsurge of foreign trade immediately after the trade agreements are concluded. The basic attitudes and the existing impediments to trade have already been described. These had a pronounced influence throughout the trade discussions. Furthermore, many important trade barriers, such as exchange restrictions, are not under negotiation except insofar as they are related to the ITO Charter.

An astute and observant member of one of the other delegations remarked to me, "None of the countries represented here is interested primarily in improving foreign trade. All are most deeply concerned about their own domestic problems." Of course, as properly understood, this was perfectly true. We are interested in foreign trade, not as an end in itself, but because it affects domestic prosperity. The willingness of a nation to negotiate and the depth of tariff cut that it will grant depend on its traditions, policies, and ambitions. Virtually every country represented at Geneva is at present confronted by some serious problem that limits its ability and its willingness to grant certain types of concessions.

The greatest impediment at present to expansion of our agricultural trade is found in British Empire preferences. But many people in England and in the Dominions believe that preferences are

essential if what remains of the Empire is to survive as an economic unit. Consequently, there was great reluctance to surrender many of these discriminatory tariff arrangements. As everyone here is well aware, a deadlock lasting for four months resulted when our Congress passed a bill that would, in effect, have raised the import taxes on wool by 50 percent. Since this is Australia's principal export to the United States, that country saw nothing to gain by giving up its preferences in the English market if we were to raise our tariff on this commodity. The other Southern Dominions took the same view.

At the same time Cuba found itself in a difficult position, partly because of the uncertainty over preferences, and partly because of some implications in our recent sugar act. Consequently, Cuba was unwilling to grant concessions on some of our important products or even to maintain some favorable rates already existing. Cuba has been a highly important market for our rice, wheat, and lard, as well as many other agricultural products. But if British preferences were to be reduced to any appreciable degree, it was inplied that the U.S.-Cuban preferences would also be scaled down. The favorable position of Cuba in our sugar and tobacco markets depended largely on U.S.-Cuban preferences. It was not apparent to Cuba that it would gain enough in other directions to offset the loss of this preferential treatment.

As another complicating factor a strong pressure for tariff increases has recently developed in many countries. This is especially true in those countries whose tariff rates are fixed on a specific basis. With the great increase in prices during the war period, the ad-valorem equivalents and the degree of protection afforded by these specific duties have fallen to a third, a quarter, or sometimes a smaller fraction of their prewar rates.

When the Geneva Conference met, several countries were in process of revising their tariff structure, generally with material increases in rates. Shortly before the Conference opened, France and Czechoslovakia raised their duties quite materially over prewar rates, and wished to start bargaining from the new levels. Another country wished to include in its trade agreements a clause that would permit it to adjust its specific rates upwards to compensate for depreciation in its currency relative to the dollar since 1939.

A development more agreeable to those who wish for trade expansion is occurring in the Low Countries. Here, Belgium, Netherlands

and Luxembourg are forming a customs union with a moderate tariff structure on an ad-valorem basis. The people of the "Benelux" area realize that they must trade to survive. Consequently, this bloc of countries constituted a strong force for moderation and for lowering of barriers.

There were two types of countries that were particularly disinclined to lower their duties or remove other barriers. The first group included those countries that are in foreign exchange difficulties. The second included industrially under-developed countries. Together, these made up a majority of those represented at Geneva.

The industrially under-developed countries included those in Latin America and the British Southern Dominions, as well as India and China. One announced purpose of the Conference was to stimulate economic development. Delegates from countries that consider themselves industrially under-developed appeared to believe that the best way to expand new industries is to raise import duties on their products. In several cases even high tariffs were considered inadequate protection. Almost complete freedom to use tariffs, quotas, and other restrictions, was strongly demanded by some delegations on the grounds that they were essential either to protect new industries or to conserve scarce foreign exchange.

At an international conference, such as that at Geneva, one is strongly impressed by differences in point of view as between countries. Some of our policies seemed quite unreasonable to representatives of other nations. On the other hand, many of the industries for which they demanded protection appeared quite uneconomic to us. In may cases it was known that industries to be protected consisted of only one or two firms, sometimes of a single plant. The fact that higher tariffs and quantitative restrictions are more likely to lead to new monopolies than to new industries, especially in small countries with restricted markets, did not seem to be generally realized.

In opposition to tariff concessions requested of some other countries, it was argued that the industries affected were already in a bad way. To reduce their protection would therefore force further liquidation and might wipe them out entirely.

Another common source of opposition was the claim that some country depended on import duties for much of its revenue, and therefore could not grant sweeping reductions. Still another argument rested on the concept of essentiality. Several countries follow

a policy of levying heavy taxes against "luxuries," and were therefore unwilling to reduce rates on this type of product. At the same time, concessions were often refused on "essential" items, such as common foodstuffs, because of the need for self-sufficiency.

I have tried to give you in a few minutes a thumbnail sketch of some of the principal influences that were impinging on the governments represented in Geneva, and the resulting attitudes of their delegations. I am aware that this sketch is very fragmentary and incomplete. It should help, however, to explain why deep, general reductions in tariff rates and other barriers were not to be expected from other nations any more than from the United States. They simply were not in the cards.

The Charter

The principal purposes of the International Trade Organization, as stated in the draft Charter, are to promote international trade, eliminate trade barriers, expand production, exchange and consumption of goods, promote full employment, assist the economic development of member countries, and facilitate the solution of trade problems by consultation and collaboration among members.

Obviously these are admirable objectives. The problem is to put them into practice. In the first place there is a serious practical difficulty in spelling them out in the course of negotiations, and defining them so that it is possible to say clearly whether a given trade regulation adopted by Country X constitutes a legitimate aid to its own industry or is instead a restrictive barrier against the trade of Country Y. Second, there may be different views as to what methods should be applied. Therefore it may be difficult to get acceptance of any one proposal by a majority of the member countries. Third, it must be remembered that most trade barriers have been erected deliberately as instruments of policy by member countries, and governments of these countries may strenuously oppose their abandonment. Most of the disagreements in forming the Charter and many of the escape clauses that we find in it have come from one or more of these three difficulties.

Debates on the articles of the Charter accurately reflected the conflicting interests of the various nations represented. There was an almost universal spirit of friendliness and cooperativeness among the various delegations. Nevertheless, each one represented the interests of its own country. Consequently, each attempted to

keep any trade advantages that it already had, often by asking for exceptions to the general rules.

Since the full text of the Charter will soon be available for your examination, I shall not attempt to summarize it in detail. Instead, I shall merely comment briefly on a few of its salient features, especially those likely to affect agriculture.

In Chapter II it is recognized that the maintenance of full employment is not a matter for domestic concern only but will require international cooperation as well as appropriate national action. In its efforts to sustain employment, however, no individual nation is to take measures that would create balance of payment difficulties in other countries.

If such a persistent maladjustment in a member's balance of payment occurs, the member concerned shall make its full contribution toward correcting the situation. This implies that if dollars are persistently "scarce," the United States should do all that it can to increase the availability of dollar exchange. At the same time it is stipulated that the other countries involved shall likewise take appropriate action to correct the same situation.

A little later in the same chapter it is stated that the Organization shall, if it considers a decline in employment, production, or demand to require such action, initiate consultations among members with a view to their taking appropriate measures against the international spread of such a depression. But, although there are some prescriptions as to types of action that governments should not adopt, there seem to be no positive suggestions regarding actions that might constitute effective controls.

Early in the Conference several of the heads of delegations in addressing the plenary session emphasized that one of the purposes of the Organization is to control or at least reduce fluctuations in employment and trade. In general these speakers did not appear to distinguish between the problem of attainment of a high level of employment on the one hand, and that of the maintenance of a uniform rate of activity on the other. Later, less and less was heard about the control of business fluctuations, and this subject is not dealt with at length in the final draft of the Charter.

Chapter III recognizes the importance of economic development in all countries. If a member wants help in drawing up economic plans, the Organization shall give advice and technical assistance as far as its resources permit. It is provided that a member may

request the Organization to release it from any obligation that it has assumed under the Charter if it believes that such obligation stands in the way of its program of economic development. In this case the Organization may either deny or may grant the request after negotiations between the members to whom the obligations apply.

Article 16 provides for unconditional most-favored nations treatment with respect to imports and exports. This does not, however, require the elimination of (a) preferences between territories of the British Empire, (b) preferences between countries under common sovereignty as listed in the Charter, (c) preferences between the United States and Cuba, (d) preferences existing between listed adjacent countries. In no event shall any preference permitted to remain in effect exceed the level permitted in the multilateral trade agreement concluded at Geneva.

This article has two effects. The first is to prohibit the granting of new preferences. The second is to legitimize under the Charter those preferences of the groups mentioned that still remain in effect after the Geneva Conference. It was hoped that Great Britain and the Dominions would be willing to negotiate toward the elimination of their preferences in exchange for concessions of other types. The final outcome of these negotiations is not known at the time this is written.

Quantitative restrictions on imports and exports are prohibited or regulated under the Charter. Exceptions are made regarding restrictions applied to relieve critical shortages of foodstuffs or other essential products, restrictions applied in accordance with international commodity agreements, and those which limit output or remove a temporary surplus by making it available to certain groups of domestic consumers free or at prices below current market levels as in our school lunch or food stamp programs. Import restrictions may also be used to safeguard the balance of payments and the monetary reserves of member countries or to establish or maintain state trading enterprises or monopolies.

There was strong pressure, particularly by some of the underdeveloped countries such as India and New Zealand, for more general approval of quantitative restrictions, and for more exemptions from the rule of non-discrimination. It was the contention of these countries that import duties do not provide controls strong enough to permit them to develop their industries in competition with the countries that are already highly industrialized.

Export and import subsidies are prohibited, with certain exceptions. Exported commodities may still be exempted from duties, and taxes may be collected on domestically consumed portions of the products. Furthermore, such taxes may be used to make payments to domestic producers. Use of subsidies is permitted in disposal of commodity surpluses if commodity agreements have been tried and found not to work. They are also permitted in systems which are intended to stabilize price or returns to domestic producers, and which result in prices for export above the level charged domestic consumers. Otherwise, export subsidies are to be discontinued within two years after the Charter enters into force.

Chapter V prohibits business practices which restrain competition, limit access to markets, or foster monopolistic control. Such practices include fixing prices or conditions of sale, allocating territorial markets or fields of business activity, fixing quotas of sales or purchases, limiting production or setting production quotas, discriminating against particular business enterprises, preventing the use of technological improvement, and so on.

Chapter VI is of particular interest to agricultural economists. It provides for the establishment of inter-government agreements to deal with primary commodities including products of agriculture, forestry, fisheries, or mines. Such agreements may be employed to alleviate economic situations which arise when adjustments between production and consumption cannot be effected by the operation of normal market forces, to facilitate shifts of resources and manpower out of over-expanded industries, to moderate pronounced fluctuations of prices, and to assure equitable distribution of primary commodities in short supply.

The Organization may appoint a study group to investigate any difficulties in which a primary commodity is involved. Following the investigation, the Organization may then call an inter-government conference to discuss measures designed to meet the problems existing or anticipated. Such measures may include the establishment of commodity agreements if burdensome surpluses exist or if widespread unemployment is expected to result from maladjustment in the primary industry. Such agreements may not run for more than five years without renewal. They may include nonmember countries as well as members. They may provide for regulation of production or trade in the commodity concerned, or for the regulation of prices. In voting on substantive matters under such an agreement, countries which are primarily interested in

imports of the commodity shall have a combined voice equal to that of countries interested in finding export markets.

Such agreements shall provide for availability of supplies adequate for world demand at reasonable prices, and when practicable, for measures to expand world consumption. Participating countries shall formulate and adopt programs of domestic adjustment to conform to the control agreement adopted.

Such commodity agreements may, no doubt, constitute useful instruments for resolving certain types of economic maladjustments. The provision to give importing and exporting countries equal voices in framing the agreements promises a valuable safeguard to consumers. The interests of importing and exporting countries, however, are difficult to reconcile, particularly when questions of "reasonable" prices are concerned. The recent unsuccessful London Wheat Conference lends emphasis to this.

Agreements for economic control by individual commodities have a certain initial simplicity to recommend them. Furthermore, processing and commerce are conducted in terms of individual commodities. Therefore, such agreements are likely to be of interest to traders and processors as much as to farmers. On the other hand, agreements by individual commodities do not conform so well to the framework of agricultural production, at least not in the United States. Thus, mutton is produced along with wool, and in eastern parts of the country, sheep represent a minor enterprise in a diversified farm business. Wheat is a competitor to oats, barley, and to some extent to grain sorghums, corn and pasture in the farm organization in various parts of the country.

For various reasons, inter-government agreements may not be equally successful on all types of commodities. If successful, however, they are likely to result in shifting manpower and capital from one farm enterprise to another within a region, or even as between regions. Consequently, coordination is likely to be needed to assure that the sum of such arrangements will actually operate in the public interest as far as our own country is concerned and will be equitable as between countries.

Probably the most important current development of international trade is that of state trading. This general subject was discussed at length at Geneva. But it cannot be said that any very effective control measures were adopted.

It is stipulated in Article 30 that a state trading enterprise shall be non-discriminatory and influenced solely by commercial con-

siderations such as price, quality, marketability, and transportation. Article 31 provides that any member operating a state monopoly shall, upon request, enter into negotiations with any other member regarding the expansion of trade in the article under the monopoly. A state operating an export monopoly shall negotiate regarding limitation or reduction of protection afforded to domestic consumers in the monopolized product, or regarding provision of an adequate supply to other members at reasonable prices. If it is an import monopoly, the negotiation would be concerned with the margin by which the price to consumers in the country with the monopoly might exceed the landed cost. In this case, the country exercising the monopoly is to agree to import quantities sufficient to satisfy full demand at a price which is no greater than landed cost plus the agreed margin.

In view of differences in qualities of product, seasonality of supply, problems of credit and of storage, and other practical considerations, it is hard to see how a rule of non-discrimination could be enforced. There is always an explanation for a policy followed. It would appear that the margins mentioned above would be extremely difficult to negotiate for technical reasons, and that non-discrimination rules will be harder to enforce against countries using state trading than those using private trading.

Although discriminatory quantitative restrictions are prohibited in private trading, a state monopoly can use such discrimination directly and automatically by adjusting purchases or sales of the commodities in which it deals. Since it has not been possible to devise effective means of control over state monopolies, one effect of the Charter may well be to force countries farther into state trading. As mentioned earlier, the drift toward state trading is already strong, and several countries already conduct the bulk of their foreign trade through governmental agencies. Each new government intervention in economic activity is likely to expand further the area of state trading and restrict that of private trading.

The Geneva Conference has made important progress in setting up means of regulating international trade, especially where it is carried on by private traders. But there is still a lot of work to be done. As yet, the escape clauses are too numerous and the regulation of state trading does not appear to be provided for as effectively as that of private trading. Strengthening and rounding out the Organization envisaged in the Charter will still require many years of patient and persistent effort.

DISCUSSION*

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Rather than discuss details of these papers I would like to present some general propositions which will serve to tie the three[1] papers into the one subject of world needs and the possible role of the United States in meeting these needs.

I. *US Export Prospects*

During the first six months of 1947 US merchandise trade was at the rate of $15.2 billion per year. This is the highest level in our history. However, as a percent of US gross national product, exports during the first six months of 1947 reached the rates of the war years, 1943–44, but were substantially below the levels of the immediate post World War I years.

What are export expectations for fiscal 1948 and after? Without further and new US programs of aid to foreign countries, the most realistic assumptions about US imports from abroad and about the use by foreign countries of other means of dollar payment indicate that US merchandise trade for fiscal 1948 will not exceed $13 billion, a decline in merchandise trade of at least $2.2 billion from the levels of the first half of 1947. (These estimates were made on the assumption of prices at the beginning of 1947. Even with price increases, dollar limitations may still make this a realistic money estimate.) Under present aid commitments, the most optimistic forecast for foreign ability to buy goods in the United States for the year beginning July 1, 1948, with the same price assumptions, is some $10 billion—a further decline of $3 billion from the estimated level for fiscal 1948 and of something over $5 billion from the recorded level of the first half of 1947.

The percentage decline in US exports under present aid commitments will probably be fairly evenly spread throughout the continents of the world during fiscal 1948, although the ability of specific countries to buy in the US will change, some very radically, within continents. Without further aid programs it is almost certain that in fiscal 1949 the percentage decline for Europe (including the UK) will be significantly greater than the decline for total US exports.

II. *The Commodity Pattern of US Exports*

How important are agricultural exports in this total value? Of the $15.2 billion rate of merchandise exports from the United States in the first half of 1947, wheat and flour, other foodstuffs, raw cotton, and tobacco accounted for at least 25 percent. These agricultural products taken together comprise the largest homogeneous component of total exports.

* A discussion presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 8, 1947.

[1] One of these papers will be published later.

Within the group, wheat and flour are the most important single commodity (about 7 percent); all other foodstuffs together comprise some 12 percent, with raw cotton at about 4.5 percent, and tobacco about 2.5 percent. I should add that these magnitudes are in export prices, f.o.b. ports, and thus include higher values than those at the farm. On the other hand, they exclude shipping costs, which have in large part to be met by importing countries in dollars. They thus understate the importers' expenditures.

What will be the commodity pattern of the new levels of US exports under present US aid programs? The following conclusions are based on certain statistical projections which I had occasion to make over the past weeks. Despite the reduction between the actual US exports in the first half of 1947 and those in prospect for fiscal 1948, substantial increases in exports can be expected in coal, in fertilizers, in agricultural machinery and in wheat and flour. Practically all other merchandise exports can be expected to decline. Except for ships and transportation machinery—exports which were governed by very special circumstances warranting exclusion from this discussion—the largest commodity export declines associated with the reduction in total US exports can be expected in the "other foodstuff" category. The percentage decline for other foodstuffs, as well as for cotton and tobacco, is expected to be significantly greater than the percentage decline in total US exports. These generalizations hold up well on a regional basis,—in Europe in particular, where the quantitative pattern along these general lines is intensified. Wheat and flour imports increase more significantly, while all other foodstuffs decline very much more than do total commodity imports from the US. By and large the general pattern is duplicated in the specific imports from the US for other countries.

I believe these statistical results are significant ones. I hesitate to present them as broad generalizations for they have thin theoretical bases. Imports from the US play a relatively small role in the total utilization pattern of goods in most foreign countries. Declines in ability to buy in the US are thus only one component in the income reductions which influence the total (domestic and foreign) expenditure patterns in foreign countries. However, there is some support for their applicability in experience with exports in the second quarter of 1947. Our estimates made on a fixed price basis for the second quarter of 1947 (before final figures were available) differed from these final figures, which reflected the price increases that actually occurred, in a pattern which our generalizations would have suggested. I feel it perhaps safe to conclude that continued dollar shortages resulting in reduced US exports will—given approximately the present foreign situation, which might roughly mean during the next 12 to 18 months—more than proportionately affect US exports of agricultural commodities. It is conceivable too that, given a reduced US ability to supply grains, foreign dollars that will thus be released may well during this period be shifted not to other US agricultural products but to purchases of non-agricultural goods.

III. *Implications*

What does this probable reduction in food exports, under present aid programs, mean? Certainly, given the present situation in, and perhaps expectations for, employment in this country, the decline in shipments abroad will in general result in expanded American utilization. This is probably unevenly true for all agricultural commodities. The decline in export demand may result in a significant softening in prices for such goods as fruits, eggs, vegetables, tobacco, and cotton. These are perhaps serious consequences. I think they are less serious than the implications of the export decline for the countries that are now in need of American products.

The apparent preference for certain non-agricultural products from the US which becomes apparent as total exports decline (or as the purchasing power of foreign dollars is reduced) does not, to me, raise doubts about the real need in foreign countries for food products. It rather indicates that, with reduced ability to buy, these countries prefer to devote all efforts to rebuilding their economies. In this process, civilian consumption must suffer. In other words, the reduced food purchases—which, like the so-called gaps in the world cereal balance, are made up in the morbidity rates of the deficit countries—are reductions in supplies which are held to be essential.

Even with the record $15.2 billion export rate of the first half of 1947, the European share, for example, was about $6 billion. Current estimates of the Paris Conference for Western European countries alone are about $7–8 billion per year for the next four years. This, or even a "screened-down" import need estimate, is well above the $6 billion for all of Europe, and the less-than-$5 billion in prospect for fiscal 1948.

I repeat again, US commodity exports of $15.2 billion, even though at record levels, are still below earlier percentage achievements of our economy. I think the Krug Committee report, shortly to appear, will show no alarm in general over the implications for US resources of the rate of exports in the first half of 1947.

For the longer run, it seems clear that, barring a large private capital investment program over a long period of years, the value of US exports cannot be expected to exceed $10 billion per year, which at present national income levels will be the percentage of exports obtained in the middle '20's. It seems to me that a reconstructed world will be able to pay for this level of imports by exports to the US and other dollar earnings of a recurrent nature. It is probably true that in this export pattern food and agricultural products will not hold the position that they have held in the immediate post-war years. It may indeed be that the need for larger markets, as a stimulant to American production, may prompt both agricultural and non-agricultural interests in the US to urge the re-institution of measures for maintaining larger levels of exports. It would indeed be ironical if such future internal pressures did result in export levels which we find so hard to maintain today and which are now an essential for the rehabilitation and development, economically and politically, of foreign countries.

RURAL PLANNING IN THE UNITED KINGDOM*

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RURAL planning in the United Kingdom[1] falls into three main heads: (I) *economic planning* to ensure stability and efficiency in farming; (II) *amenity and land use planning*, to ensure that our very limited land resources are used to the best advantage of the nation and to prevent scenic spoliation of the countryside; (III) *rural welfare planning* to raise the standard of living of farm families, particularly of agricultural wage earners, and generally to secure for the countryman the same social privileges as the townsman.

In the United States these are familiar aims. There are, for example, price support programmes under the first, soil conservation under the second, and Rural Electrification under the third of of my heads. If, however, the United Kingdom approach to these goals differs from yours, it is because our social, economic and political problems are different from those in the United States. We are very short of land; we have a very large urban population; we import much of our food and fibre; the war has made us a debtor nation acutely short of foreign exchange, particularly United States dollars; further, although we share with you not only a fierce belief in the freedom of the individual but also many historical and cultural traditions, our political structure and our social attitudes differ in many important respects from yours. A few basic facts relating to the United Kingdom, and particularly to our agriculture, are therefore essential to an appreciation of our rural planning programmes.

General Background

Firstly, our density of population is very high. In England and Wales there are 703 people per square mile, compared with 702 in Belgium, 197 in France and 43 in the United States. As a result, even although we have a vigorous agriculture and our crop yields

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 11, 1947.

[1] The United Kingdom consists of England and Wales, Scotland and Northern Ireland. This paper deals primarily with Rural Planning in England and Wales, but the policy in Scotland and Northern Ireland, both of which have their own Departments of Agriculture, is essentially the same though the administration may differ.

per acre average twice those of the United States, we depend largely on imports of food and raw materials. Before the 1939–45 war we imported two-thirds of our total food consumption, and even during the war imports accounted for slightly over one-half.

Secondly, our high population density makes land a scarce and valuable commodity; its proper and efficient utilisation is vital to our existence. Imagine what it would be like to have 47½ million people, or almost one-third of the entire United States population, living in Oregon—a state equal in size and comparable in climate to the United Kingdom but with only a million inhabitants.

Thirdly, only 7% of our total population is engaged in farming, compared with 20% in the United States. Accordingly, our agricultural policy is influenced by the views of the other 93% who are all consumers and a large proportion of whom are industrial workers. Hence, in return for fixed prices and economic stability, our Government must not only demand of farmers some guarantee of efficiency but must have the power to enforce that guarantee.

Fourthly, we have, as a result of the war, an acute and large unfavourable balance of payments, whereas you have a very considerable favourable balance. Before the war, our exports of goods provided about 60% of the exchange for our imports, the remaining 40% coming from shipping, insurance, etc. and interest on overseas investments. But these investments are now largely gone; we had to dispose of them to finance our war effort, particularly during the year when the British Commonwealth stood alone against Hitlerite Germany. Our problem now is to rebuild the export trade we sacrificed during the war, and having done that, to increase our exports or, if necessary, cut down our imports until a balance is achieved.

Fifthly, this problem is aggravated by the other large losses we sustained during the war. For example, the destruction of houses through bombing has been estimated at $6 billion while our loss in shipping amounted to $3 billion. For six years (1939–1945) we were unable to spare the men and materials to repair and improve our transport services and industrial machinery. Furthermore, our overseas debt has been increased by $12 billion while our loss of manpower by enemy action totalled 387,000. All these losses mean that we must handle our national economy very carefully. We cannot afford the luxury of a gambling chance, and that is one good reason why a nationally planned economy is essential.

On the asset side, however, we have a vigorous and skilled in-

dustrial and farm population; a national unity which exhibits no great social conflicts; geographical compactness; and a mild humid climate and soils, which agriculturally, are well adapted to intensive mixed and grassland farming with emphasis on the protective foods—livestock, fruit and vegetables. With these basic facts in mind, we can now turn to the details of our rural planning programmes.

ECONOMIC PLANNING

Price Support and Production Policy

Prewar: From the discontinuance of controls after the first world war until 1931, the United Kingdom adopted a policy of laissez faire towards agriculture and, apart from research and education, there was no direct government assistance to or tariff protection of farming; imports were freely admitted and the only exception was the subsidised sugar beet industry. Admittedly, agricultural land was freed from rates (local taxes) during this period, but there was no intervention with the agricultural economy until 1931, when Government aid became essential to counter the depression. As a result, during the thirties, four main lines of governmental action were developed.

First, imports of much agricultural produce were limited by means of quotas and moderate tariffs.

Second, Agricultural Marketing Acts were passed in 1931 and 1933. Under these Acts producers of a commodity were given the right to form a Marketing Board, provided two-thirds of them were in favour. Once a Board was set up it had compulsory powers over the marketing activities of all producers of the commodity concerned. Not only did a Board act as a bargaining agent with the relevant trade organizations of dealers and packers, but it had also limited powers to regulate trade in the commodity, e.g. by licensing all handlers, etc. Such Boards were set up for milk, hogs, potatoes and hops.

Third, direct exchequer subsidies were paid to farmers in respect of oats, barley and beef. In the case of wheat a levy was imposed on *all* flour used in the United Kingdom from both home and overseas sources, and the funds so created were used to bring the market price of home-grown wheat up to a standard figure.

Fourth, grants were made to farmers to cover 50% of the cost of lime and phosphatic basic slag for application to agricultural land.

Similar grants were available for some types of drainage. Shortly before the outbreak of the 1939–45 war, farmers were paid a subsidy of $8.00 an acre for ploughing up pasture that had been seven years or more in grass. The aim of the latter subsidy was, of course, to rejuvenate old pastures and accumulate fertility and to have an increased acreage under tillage crops in case of war.

Although the general economic recovery of the middle and late thirties was, no doubt, primarily responsible for pulling our farmers out of the depression, these four lines of action did have one important consequence. They helped to increase the fertility and productive resources of our land and they incidentally provided a nucleus of administrative machinery on which our wartime production and marketing policy could be rapidly built.

Wartime

With the outbreak of war in 1939, we moved rapidly to a planned food and agricultural economy. In order to release shipping for military purposes, imports of food and feeding stuffs were cut drastically. Simultaneously, we ploughed up 38% of our permanent grassland and devoted the resultant increased tillage acreage to crops for direct human consumption (wheat, potatoes, sugar beet, vegetables) and to cereals and fodder crops for livestock, especially dairy cattle. Calorie and protective crops and milk production had top priority.

This revolution in our agriculture was achieved through five main instruments:—

(a) Price fixing and marketing control. Farmers were offered good fixed prices and guaranteed markets for about three-quarters of the total value of their produce. This enabled them to get on with their primary job, viz. production, without having to worry about future prices; it enabled the Government to adjust relative prices in favour of the commodities most urgently needed.

(b) Control (by publicity and by direction) of the acreage of essential and luxury crops and, in some cases, of livestock numbers. Price and persuasion by themselves were neither rapid nor certain enough methods of converting our farming to wartime needs.

(c) The allocation (rationing) of feeding stuffs, fertilisers, farm machinery and other production needs, which were in short supply.

(d) The provision of both the technical advice and of the custom work and other goods and services without which a grassland farmer could not become a crop producer.

(e) The whole-hearted cooperation of our landlords, farmers and agricultural wage earners.

The Ministry of Food was responsible for marketing; the Ministry of Agriculture was responsible for the execution of the remainder of this programme which, viewed in retrospect, created a most effective *Machine* for rapidly changing the volume and pattern of our production. The whole programme was coordinated by the Cabinet.

The Ministry of Agriculture for England and Wales, which worked in close collaboration with our farmers and farm workers organizations, operated through some 62 unpaid County War Agricultural Executive Committees. These Committees, appointed by the Minister of Agriculture, each consisted of from 8 to 12 members (mostly farmers), but including landowners and agricultural wage earners. Each Committee was fully responsible for the food production campaign in its County. It had authority to direct farmers to grow priority crops and to insist on a reasonable degree of general efficiency. To this end it had power to dispossess inefficient farmers or farmers who refused to play their part in the emergency, but this authority was subject to the Minister of Agriculture's approval in each case. In practice, however, only 0.7% of the farmers in all counties had to be dispossessed during the six years of war. These Committees were also responsible for seeing that farmers were not handicapped by lack of labour, equipment or other essential supplies; for instance, they operated the National rationing schemes for fertilizers and feeding stuffs, and regulated the distribution of all kinds of controlled supplies, e.g. machinery, steel, timber, gasoline, etc.

Each Committee had "subject" sub-committees for cultivations, labour, machinery, drainage, livestock, technical developments (extension work), feeding stuffs, insects and pests, horticulture, finance, etc. and unpaid "district" sub-committees to maintain liaison between the County Committee and individual farmers through the "parish" or "community" groups. County Committees had paid executive officers and technical staffs capable of advising farmers and generally directing food production in their areas.

Early each year the Government drew up "target" acreages or quantities of the crops and livestock products required. These goals were broken down to county, district and finally individual farm quotas. At the same time, in consultation with our major farm organizations (viz. the three National Farmers' Unions) forward prices were fixed by the Government for the major agricultural

products. When ready for market, these were sold either through controlled distribution channels or to the Ministry of Food, which adapted and cooperated with existing private and public marketing organizations to the needs of a planned wartime economy.

The Future—Stability

The control of cropping (e.g. compelling farmers to grow specified acreages of wheat, potatoes) and the allocation of feeding stuffs, fertilisers, farm machines, etc. are being dropped or will cease as soon as current shortages are eased. In other respects, however, the main essentials of our wartime production and marketing organization are (with the consent of the landowners, farmers and agricultural wage earners and, in general, the support of all political parties) to be continued. The Agriculture Act of 1947, which will implement this policy, has two main aims: stability and efficiency.

Price and income stability is to be achieved in the agricultural industry by continuing the present system of guaranteed prices and assured markets for three-quarters of its produce supported, as necessary, by direct Treasury subsidies or in other ways. (Crop prices are now fixed early in the year previous to that in which crops are harvested. In the case of livestock products, *minimum* prices are announced from two to four years ahead and *actual* prices one year in advance.) How far the wartime pattern of marketing organization will be continued has yet to be decided.

The Government's annual price review, held in consultation with the National Farmers' Unions, will be continued. At this review the whole agricultural economy is considered, including cost of production and income figures produced by the Agricultural Economists stationed at the Universities in the different provinces, together with (a) any relevant data produced by the Ministry of Agriculture and by the Farmers' Unions, and (b) the internal and world demand and supply position of each agricultural product. There is and will be no standard formula for the fixing of prices. The prices fixed will be calculated to give a fair return to producers and to steer the volume and pattern of production in the direction required by the national interest.

The Future—Production Efficiency

Efficiency, already high both in terms of output per man and per acre, is to be maintained and increased *primarily* through the

provision of technical advice aimed at good farming and estate management and *not* by controlling the farmers' operations or cropping programmes. For this purpose, a new National Agricultural Advisory (Extension) Service has been set up as a branch of the Ministry of Agriculture. (Previously agricultural extension work was the responsibility of the Universities and the County Councils, aided by grants from the Ministry of Agriculture.) The Counties have been grouped into provinces, each about the size of a typical United States State, and each with a Provincial Director and a set of diagnostic and extension specialists (e.g. entomology, grassland, etc.). Each County has an Advisory Officer (Extension Agent) and 3 or 4 District Advisory Officers, so that ultimately there will be one Advisory Officer per 1,000 farmers.

Alongside the National Agricultural Advisory Service, which will be mainly concerned with "good husbandry" (i.e. efficient farming by tenant-farmers and owner occupiers), there is to be within the Ministry of Agriculture a National Land Service. This latter service will be concerned with securing "good estate management" by the landlords, who own about two-thirds of our farm land, with the administration of our well-established land tenure legislation and with the amenity and land use planning described below.

These two services—the Advisory Service and the Land Service—are being integrated at the county level through the County Agricultural Executive Committees, of which the County Advisory Officer is also normally the Executive Officer. These Committees are appointed by the Minister of Agriculture and consist of 12 members, five of whom are the direct nominees of the Minister of Agriculture, three are appointed from names submitted by the National Farmers' Union (representing tenant and owning farmers), two from names submitted by the Farm Workers, and two from nominees of the landlords' organization (the Central Landowners' Association). The Committees, which are the direct successors of their wartime counterparts, will have the authority to enforce reasonable standards of good husbandry and estate management in cases where the persuasion and propaganda have failed. Farmers or landlords who refuse to rise to these reasonable standards may be put under supervision for a year and if, after that time, there is no improvement a County Committee may, with the approval of the Minister, serve notice of dispossession.

The "inefficient" farmer or landlord, however, has the right of

appeal to an independent Agricultural Land Tribunal, the decision of which is final and binding on both the Minister and the Committee. These Tribunals consist of an independent legal chairman, appointed by the Lord Chancellor (compared with the Chief Justice of the Supreme Court), together with a farmer and a landlord, appointed by the Minister of Agriculture from panels nominated respectively by the farmers' and landlords' organizations. The enforcement of efficiency is thus almost entirely in the hands of the representatives of those engaged in farming; farmers and landlords are judged by their peers, not by Government officials.

When a farmer or landlord is dispossessed, he is, of course, entitled to compensation. The Government has the right to buy the land or alternatively the Committee may re-let to another tenant. Land which is taken over the by Government will be reconditioned by an Agricultural Land Commission—a non-representative body of four to seven members chosen for their ability and experience and then re-let to a suitable tenant.

Power to dispossess a tenant farmer or a landlord may seem an infringement of the liberty of the individual. Freedom, however, is relative. In our crowded and indebted island, we can neither afford the luxury of idle or ill-used acres nor tolerate individual farmers or landlords whose failure to give to their best prejudices the ultimate freedom of others. Apart from this, our farming industry, having had nearly eight years' experience of a planned or semi-planned economy, is willing to accept the thesis that an industrial nation, of whom 90% are in the towns, can reasonably demand efficiency in exchange for stability.

Four further provisions of this comprehensive Act may be mentioned.

First, in order to enable tenants (two-thirds of our farmers occupying two-thirds of our acreage are cash tenants on more or less fixed cash rents) to plan ahead with confidence, the Act gives the tenant still greater security of tenure than he had under previous Acts. He cannot now be given notice to quit without the consent of the Minister of Agriculture.

Secondly, the Act also provides for the setting up of small holdings, normally not larger than 50 acres in size, as a stepping stone by which promising agricultural wage earners can become independent farmers.

Third, the Act enables the Agricultural Land Commission to

carry out experimental schemes in the adjustment of farm boundaries. By historical accident rather than of set purpose, many of our farms consist of scattered fields or ill-shaped small fields. This fragmentation is often inconsistent with efficiency. Accordingly, up to three, experimental schemes (which may involve government acquisition of large blocks of land) and which will aim to re-group the farms in the experimental areas into more economic units, are to be initiated. The farms so re-grouped will be let to tenants in the ordinary way.

Fourth, as part of the efficiency drive, this and other legislation empowers the Government, through the County Committees or otherwise, to continue to do "custom" (contract) work for, and provide other goods and service to farmers and to maintain the wartime farm improvement programme through grants and loans for liming, fertilizing, water supply, drainage, etc.

The Agriculture Act of 1947 does not, however, nationalize the land. The Government will acquire ownership only in limited cases, e.g. small parcels of land that may be taken over from dispossessed landlords or for small holding schemes or to prevent excessive fragmentation or for the experimental regrouping schemes. The Government (through the Crown Lands Commission, the Armed Services, and so on) has in fact been our biggest landlord for many years and, as in the past, government owned land will be rented to suitable tenants.[2]

AMENITY AND LAND USE PLANNING

Not only must we make sure that our agricultural land is well used, but in our crowded island we must also ensure that our total land surface is used to best advantage, i.e. well allocated between agriculture, forestry, industry, housing, recreation, roads, etc. Past experience shows that uncontrolled private enterprise does not achieve either the economic or the aesthetic optimum. We want to disperse some of our urban people from large, overcrowded conur-

[2] In the United Kingdom there is a large area of hill land (humid range) some of which is used only for sheep grazing (on range lines) and some of which is marginal for cultivation. As in many other countries modern developments have tended to favour the lowland farmers, and our hill farms (or ranches) are not in a very prosperous condition, despite the assistance and generally improved economic conditions which have put other types of farming on a sound basis. We cannot, however, afford to see marginal land abandoned. Hence special measures are adopted to help hill farmers. These include direct subsidies per head of sheep or cattle and grants to cover 50 percent of such improvements as farm buildings, electricity, water supply, etc. needed to rehabilitate these farms into economic units.

bations to new towns; we want to double our limited acreage under forests; we want to prevent good farm land being used for building when cheaper or marginal land would serve equally well; we must ensure that our mineral resources are not sterilized by surface building and that exhausted strip mines are recovered for food production. Finally, though we intend to create more national parks and wild life reservations, we cannot spare the acreage that you can for large recreational facilities; we must preserve the beauty of our fields and villages so that the townsman from the "dark Satanic" mills as well as rural population can appreciate and enjoy "England's green and pleasant land."

All this means that the control of land use is essential in the national interest. The Town and Country Planning Act, 1947, and other recent legislation therefore consolidates and extends the principles of controlled land use embodied in the legislation of the last 30 years. Broadly speaking, the recent legislation provides that 145 local planning authorities shall produce local land utilization schemes which will be coordinated by the central government departments concerned; that a landowner may only sell or develop his land for its scheduled purpose and that the net price payable to the owner for land to be used for building and other purposes which enhance its value shall be its valuation for its *existing* use. It is felt that the increased value of land due to planning or the provision of such public services as electricity, water, sewage, belongs to the community and not to the owner of the land.

Afforestation:

Our approach to land utilization may be illustrated by our forestry policy. There are large areas of hill land in the United Kingdom which, by reason of altitude or for some other reason, are useless from a purely agricultural point of view, even for sheep grazing. Such areas may have, however, a value for forestry purposes, and over the past 25 years some progress with their afforestation has been made by the Forestry Commission, which is now responsible to the Minister of Agriculture, in acquiring and afforesting limited areas. However, consumption of timber in the United Kingdom has been increasing rapidly. Before the war our total timber requirements were over $260,000,000 per year, of which 96% were imported. During the war our home supplies had to be exploited heavily and we are still critically short of timber. Accordingly, the

Forestry Commission has proposed a 50-year afforestation programme designed to increase our forest area from three to five million acres. For this purpose, the Government are to subsidize and do custom work for private forest owners as well as ensuring that the increase in forest area will only take in land unsuited to farming.

RURAL WELFARE

The general effect of our economic planning should, of course, be to keep the real incomes of those who live on and by the land at a reasonable level. At the same time, our land use policy should improve rural amenities (e.g. decentralization of industry should create more local markets and make urban social amenities accessible to more of our farm population). But there are other aspects of our national policies which have a more direct bearing on rural welfare. In this category are the fixing of agricultural wages; the provision of good houses and ample education facilities; comprehensive schemes for health insurance, social security, school meals, etc.

Agricultural Wages:

The greater part of our farming population are weekly cash wage earners. Except for one short break, we have now had minimum statutory wages for agricultural workers for nearly 30 years. The aim of this legislation is to ensure a reasonable standard of living for farm workers and to bring farm wages more into line with industrial wages. The gap between farm and urban wages has been narrowed considerably, e.g. the average weekly wage of a farm worker and a bricklayer were respectively in 1924, 28/- and 72/9; in 1936 they were 32/- and 68/6; while in 1946 the figures were 80/1 and 112/7.[3] Thus in 1924 the farm labourer's wage was only 38% of the bricklayer's compared with 71% in 1946.

Higher farm wages are, it is felt, in the interests of the farmer as well as the worker. They help to retain good men on the land and simultaneously stimulate the farmer to employ labour saving devices and improve his efficiency. The level of agricultural wages, together with other costs are, of course, taken into account in fixing the prices of farm products.

Before the war, minimum wages were fixed locally by County Agricultural Wages Committees with the result that they differed

[3] At present one shilling equals 20 cents.

from county to county. During the war we moved rapidly towards national farm prices which applied equally to all farms wherever located. This movement was paralleled by a National minimum wage (applying to all counties and persons), which is being continued. The Agricultural Wages (Regulation) Act of 1947 places the fixing of minimum farm wages throughout the country in the hands of a Central Wages Board on which the farmers and agricultural trade unions sit with a nucleus of independent members appointed by the Government.

Housing, Water and Electricity:

Under various Acts dating back to 1926, grants have been available for the building and reconditioning of rural houses, but the supply is still inadequate in both quantity and quality. A survey carried out in 1941–43 indicated that only 58% of farm houses and 50% of farm workers' cottages might be described as in good condition. The same survey showed that only 47% of farm houses have a piped water supply and only 27% have electricity installed.

The Government's policy is to ensure that the rural population—both workers and farmers—are as well housed as our city dwellers and that the rents of such houses are within the income of farm workers. Although at present we are acutely short of labour and building materials, under a recent Housing Act special subsidies are available from the Exchequer for houses built by local authorities for agricultural workers. These cottages will, it is intended, be built by local authorities in villages or groups to facilitate the supply of water, electricity, and recreational facilities grants are also available to landlords for the building of single cottages for agricultural workers in the more isolated areas.

A scheme has already been in operation for some time under which farmers may obtain a grant covering fifty percent of the cost of installing a piped water supply to their farms and, if necessary, sinking a well to provide the supply. Under the Rural Water Supply and Sewerage Act of 1944, the Ministry of Health can provide greater piped water supplies and sewerage facilities in rural localities. Furthermore, the Water Act of 1945 confers on farmers for the first time the right to supply from a public source subject always to certain safeguards for the supply of other consumers.

So far as *electricity* is concerned, the Hill Farming Act, already referred to, includes the installation of electricity amongst the items for which hill farmers may obtain grants. For other farmers, the shortage of supply of electricity, labour and materials—particularly timber poles—is holding up progress, but we hope eventually to see electricity installed in every farm in the country. The Government's proposals to nationalize electricity will, it is hoped, speed this process.

Education:

As in the United States, our rural people do not have such good educational facilities as townsfolk, although the education available to rural people (and in fact the entire community) has been greatly expanded under the Education Acts of 1944 and 1946. Both primary (grade) and secondary(high school) education is available free to all children. In addition the number of scholarships available for university training has been trebled. The number of residential farm institutes (which provide one and two year practical courses) will be more than doubled. Furthermore, the number of university scholarships for agricultural courses, some of which are reserved entirely for sons of farm wage earners, has been increased.

Health and Social Insurance:

The system of national health and social insurance, which was started in the United Kingdom shortly before World War I, has recently been extended to cover every man, woman and child in the country, including, of course, farmers, agricultural wage earners and their dependents. These comprehensive schemes are (or will be) financed by compulsory weekly premiums from both employer and employee together with a contribution from the taxpayer for Exchequer funds. They are to cover sickness, unemployment, injury at work, maternity, widowhood, orphanhood, blindness, old age and funeral expenses. The self-employer (e.g. the farmer working on his own account) will contribute to and enjoy the full benefits of these schemes. In addition, the farmer and his employees are entitled to a family allowance for each child after the first, whilst their children can participate in the programme of cheap and free school meals and school milk.

Summary.

Our long-term policy is supported by farmers, farm wage earners and landlords as well as the major political parties. It is to maintain a prosperous, efficient and flexible agricultural industry, to achieve a system of land use which makes the optimum use of the limited acreage of our crowded island, and to have a rural population which enjoys standards of living, social services and amenities as good as the townsmen's. We want to produce those commodities for which our climate, soils and skills are best suited and to import those commodities that can be more economically produced elsewhere—always subject, of course, to the availability of supplies and foreign exchange.

To this end we have, it is hoped, devised flexible price support and production *machines* so that the volume and pattern of our agricultural production can, as circumstances change, be adjusted to obtain the optimum use of our total national resources of land, raw materials, foreign exchange and manpower.

Currently our agricultural output, like yours, is about one-third greater than pre-war. In order, however, to ease our acute balance of payments problem and reduce our dependence on imports of food and fibre, the British Government has recently (August 1947) decided to increase production a further 20% in the next few years. This increased target will place a great strain on our farm population and national resources. It will severely test both the flexibility and the administrative practicability of the price support and production machines outlined in this paper. British agriculture is, however, determined to contribute its full share to the solution of the nation's post-war economic difficulties, and will do its utmost to attain these new production goals.

AN APPRAISAL OF RURAL PLANNING IN THE UNITED KINGDOM*

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IN discussing this subject I should like, first of all, to express complete agreement with the general objectives which the British planning program is designed to achieve. There can be little room for disagreement regarding the desirability of more stable farm prices and incomes, more efficient farm production, greater conservation and more scientific use of the limited land resources, higher standards of rural welfare and a more prosperous and secure farm population. The real question concerns the actual extent to which the program outlined by Mr. Duckham is likely to achieve these hoped-for results.

In considering the possibilities and limitations of the program I shall deal first with a number of what appear to me to be its more favorable aspects. Thereafter I shall indicate several factors which might possibly be expected to condition or limit its effectiveness. Obviously in the limited time available only the most general sort of reference to these various points will be possible.

To begin with it may be said that the giving of a guaranteed price for whatever amount of product may be supplied will at least make it unnecessary for farmers to speculate regarding the course of price levels in the period immediately ahead. They will not need to fear lest demand and therefore price may fall between the start of production and the time a product is ready for market. Being free from the necessity of making calculations regarding the probable course of prices, they can not only choose a production program suggested by the known prices for the various products but can more completely concentrate on their production job proper. Moreover the guaranteed price should go far to prevent those tremendous variations in prices and incomes which have, in earlier years, resulted from major farmer mistakes concerning supply, demand and price prospects. Whatever may be its effect on the average income received over a period of years, it should at least result in more even income as between different years and between producers of different kinds of products. It should be stated, however, that the psy-

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chological and economic gain from the guaranteed price and market would be much more pronounced in a period of relatively limited and doubtful demand than in one of the opposite character. With the present-day demand in England no farmer should really need any price or market guarantee to remove fears or to ensure reasonable prices.

In the second place there can be little doubt that the technique of fixed producer prices makes it possible for the State to encourage and thereby secure more of certain products that may be particularly necessary at any specific time. This would be specially true if the period were one in which farm prices generally were at relatively low levels. At such a time farmers would shift readily to the production of any product the fixed price of which was raised appreciably. They would do this not so much because this particular price was raised as because the other product prices were low in comparison. While production response to a price inducement will be more pronounced under such conditions, there will be some degree of reaction under any conditions. Since price is the indicator which producers are most inclined to follow, they will, other things being equal, produce more of the higher-priced article. It follows from this that, by using the fixed-price technique, the British people can definitely arrange to obtain a larger part of their food from their own resources than would otherwise be possible. This, of course, is particularly important under current circumstances.

In respect of the question as to whether farmers in general will supply more products in general merely because prices are guaranteed, opinions may very well differ. Personally, I am inclined to the view that, on balance, they will. It may very well be that long time trends show no significant changes in total production as the result of even pronounced changes in price levels. If so this may be partly due to the very fact that past price levels were notoriously unstable and uncertain. Moreover the experience of the recent war period in several countries when many prices were fixed and guaranteed strongly suggests that a large percentage of farmers will aim to produce more if they are sure of obtaining a certain price, assuming, of course, that expansion of production is technically possible. This is not to deny that a certain percentage of farmers will do exactly the opposite. The main point about the guaranteed price is that it does remove a large element of risk the running of which has heretofore been a definite obstacle to production. In addition the

guaranteed price gives farmers something definite to work for. If its general effect is to increase production there is something to be said for its use in England at the present time when extra production is the prime requirement.

There will undoubtedly be some who will criticize the program on the ground that the application of the guaranteed price and market provisions is incomplete. In reply to any such criticism it may be said that, while there are a number of products to which the guaranteed provisions do not apply, this does not mean that producers of these particular products will secure no price and market support assistance. Such assistance will be obtained indirectly for the reason that the giving of specific guarantees in respect of the more important commodities which constitute the major percentage of the total agricultural production will tend to limit production of the products not expressly covered by the guarantee provisions. It may also be said that, by confining the fixed price and market guarantees to the more important products, the general investigatory and administrative task is much more likely to be kept within the bounds of feasibility. Moreover the concentration of effort on a limited list of products should increase considerably the accuracy of the statistical data on which the fixed prices are based.

Passing to the provisions which are designed to increase productive efficiency one cannot but feel that the extension set-up in general and the operation of the County Agricultural Executive Committees in particular should aid considerably in spreading agricultural technological information among many of those farmers who are ordinarily least likely or able to obtain it. It is generally recognized that county agents everywhere have always found it easiest to secure co-operation from that relatively small percentage of farmers who are already the most efficient and who, consequently, are least in need of the special services provided. It has always been difficult and often impossible to secure the confidence of and make a definite impression on the great mass of farmers whose knowledge and methods are most in need of improvement. In addition it is only too obvious that there are definite physical limits to the number of farmer contacts that a paid extension worker can make. In order that his work may be made fully effective he must have the active co-operation of the leaders in his farming community. The uniqueness of the English program lies in the fact that it makes special provision for this cooperation to be

supplied continuously and in an organized fashion. Moreover the members of the Executive Committees are clothed with specific authority and responsibility. Since the number of farmers on the Committees and Sub-committees is fairly large and since each local area is represented, it should be physically possible to establish personal contact with and exercise some degree of supervision over every farmer in the country. It would thus seem that the English system does provide a mechanism whereby every farmer can at least be led to some of the water which emanates from scientific headquarters. To the extent that such water is actually imbibed an improvement in productive efficiency can be expected.

Apart from any influence on productive efficiency there is a good deal to be said for the emphasis which the English system places on the concept of industrial self-government in agriculture. In recent years the actual extent to which farmers can or should be expected to rely on their own cooperative efforts has been a subject of considerable controversy in many quarters. For the most part cooperative self help has been thought of in terms of organized cooperatives for the purchase or sale of commodities or the performance of specific marketing functions. The making of organized representations to governing bodies has also been looked upon as a legitimate and necessary form of cooperative self help. On the other hand comparatively little attention has been given to the possibilities of applying the cooperative self help idea in the realm of farm production proper. In view of this the current nation-wide application of the idea in the United Kingdom should be looked upon as a most welcome experiment. The additional fact that the expansion of industrial self-government would seem to make government administration of agriculture in England less purely political is also encouraging. In regard to the compulsory features of the program most people will agree that there are farming practices in every community which militate against the general interest and, as such, should be eliminated. To the extent that the British program provides sanctions which are calculated to prevent the exercise of individual liberty in a way that constitutes a flagrant violation of a social trust it should be highly commended.

A further favorable feature of the greater efficiency part of the program is that it can hardly miss making some contribution to an improved social relationship between the different grades or groups of farmers. That a fairly pronounced stratification exists among the

ranks of British farmers is a generally recognized fact. Some reduction of this should gradually occur for at least two reasons. For one thing the social contacts that will be incidental to the supervisory work of the Agricultural Executive Committees will make for a greater commonality of interest and understanding. In the second place, since the major part of the efficiency drive will be concentrated on the more economically and socially disadvantaged groups, any progress made should be reflected in a gradual narrowing of the gap between the highest and lowest degrees of farming efficiency and should therefore result in a gradual lessening of the inequality of farm incomes. Whether it is sociologically sound to place such exclusive emphasis on technical and economic efficiency I leave for others to say. In this connection, however, it should perhaps be stated that the emergency situation in England has made it necessary for many farmers to undertake rather suddenly types of farming with which they are relatively unacquainted. The situation is such that there is urgent need for learning new techniques as speedily as possible.

In regard to the provisions aimed at improved land use one can say little more than that they seem sound in principle. It would appear that the State will have ample land on which to demonstrate its capacity as a farm manager. Critics who may regard wholesale land nationalization as a necessary prelude to its subdivision into the optimum-sized farm units must recognize that any such policy, whatever its merits, is at the moment financially unthinkable. The arrangements whereby the Agricultural Land Commission is to determine the effect of regrouping scattered and ill-shaped pieces of land on operational efficiency, while experimental in nature, are very much in order and should result in extremely useful data on which to base future policy. The revisions to the land tenure legislation seem likely to add considerably to the clarification and definiteness of owner-operator arrangements. If they do they will contribute something indirectly to a sense of security and through that to the all-important increased efficiency. As to the arrangements for establishing small holdings one can at least say that the selection of the occupants on the basis of proven practical experience is likely to ensure a greater degree of success than that heretofore experienced. While the size of the holding seems small in the light of the land requirements ordinarily recommended for efficient farming, it may be quite sufficient for certain types of farming.

Moreover it may be large enough to permit demonstration of the economic feasibility of the part-time and one-man types of farming.

Generally speaking one cannot help concluding that the combined effect of the various parts of the program aimed at greater efficiency will be considerable even though it may be much more gradual than is desired. To achieve really marked efficiency gains within a reasonable period, however, full reliance cannot be placed on any production planning program as such. That goal can only be reached if British farmers can be made to realize the full consequences of failure to attain it.

Passing now to what may be thought of as the more limiting considerations, one may note first of all that providing stabilized prices is going only part way toward providing stabilized incomes and that, after all, it is income rather than price that is the farmer's main concern. In answer to this the defenders of the British price program might reply that income stabilization is out of the question inasmuch as it is not possible for any government to guarantee stable production. The obvious reply to this, however, is that, while it is impossible to bring about even production, it is by no means impossible to do considerable about regularizing the amount of a product which goes to market. In view of this one might have expected to find in the program some specific provision for applying the ever-normal-granary idea. It may well be, of course, that the current urgency of the food demand made it quite impossible to even consider holding any part of a season's supply off the market. It may also be that at the present time the government's hope of securing extra production rested mainly on assuring farmers of the largest possible income in the year immediately ahead rather than a more even income over the longer run. Again part of the reason may be that the particular products turned out in Britain are not readily storable or that storage space is not sufficiently adequate. Or again it may be that any such plan will have to await the formulation of a more permanent marketing program. In any case the fact remains that no special attempt has been made to ensure that incomes as well as prices are kept reasonably stable. In particular there is apparently no regular means of providing for a farmer whose production has fallen down seriously through no fault of his own. To such a farmer a guaranteed price, no matter how high, is of little value.

In the second place, the government's ability to vary a fixed price is supposed to make it possible to secure any desired degree of

flexibility in production. In this connection, however, recent experience in many countries including the United Kingdom has made it reasonably clear that there is likely to be considerable government uncertainty regarding the degree of farmer reaction to a given price change. The response is likely to depend on several factors besides the price change itself. One such factor is the extent to which expanding or contracting the production of a particular commodity may unbalance the general production program. Another concerns the extent to which production resources are already fully taxed at the time that an extra price inducement is offered. Still another and very important factor is the general level of farm prices at the time that a particular price change occurs. Generally speaking a given price change in either direction will exercise a far greater effect on production when farm prices in general are low than when they are high. Moreover, when prices generally are low, a further drop in a fixed price designed to discourage production might produce the very opposite effect.

That it is difficult to find the exact price change that will result in a desired change in supply is clearly shown by the actual experience in England to date. The mere fact that, in order to obtain the desired output, it has been necessary to supplement the price inducements with production directives is, to say the least, significant. The decision to incorporate in the 1947 Agricultural Bill provisions for controlling the amount of tillage is equally significant. While the British Minister of Agriculture has recently expressed the hope and belief that a better understanding of supply-price relationships would come with experience and that this would eventually make resort to production directives unnecessary, the possibility that these relationships will ever be more than partially understood seems fairly remote. This, of course, is not to deny that price fixers can exercise very considerable influence over production trends.

A rather different but related point concerns the specific purpose to be served by the fixed prices. If a price is set at a given level simply in order to induce a desired change in supply, there would seem no reason for assuming that it will bear any close relation to the price required to ensure farmer prosperity or guarantee stability. It will, in fact, be determined primarily by demand considerations rather than those relating to supply. This may not give rise to any particular problems so long as all prices are relatively satisfac-

tory to the farmers. If, however, all prices become less satisfactory the farmer organizations are likely to object violently if a price-fixing authority attempts to reduce a particular price just in order to reduce production by a certain amount. If, in these circumstances the authority is forced to compromise by fixing the price more in line with production costs, part of its ability to bring about specific changes in supply by making specific price changes will have disappeared. The question, therefore, is whether it will be possible in practice to set prices that will serve two competing purposes at one and the same time. In other words whether it is possible to secure stability along with adjustments in the use of resources may be open to some doubt.

In regard to the prices set there is a further matter that may give rise to some difficulty. While the government has promised stabilized prices there may be some difference of opinion as to what a stabilized price really means. At the most the government is likely to regard it as a price that will maintain the present average level of farm incomes. On the other hand the farmers may look upon it as one that should remain at or near the existing level. British farmers, if they run true to the past performance of their fellow farmers in some other areas, are likely to demand that prices be not only stabilized but that they be stabilized at a high level. If the level of the stabilized prices is to be such that it will result in stable net incomes, then the prices must fall as productive efficiency and therefore production itself increase. As efficiency increases cost per unit and therefore price required should fall. In other words, farm income (so far as it depends on price) will tend to be the same regardless of the degree of productive efficiency. This raises the interesting question as to whether farmers are likely to keep on trying for ever greater efficiency when they discover that they can expect no extra income for so doing.

In connection with this matter there are several strong reasons why the level of the guaranteed price must fall as productive efficiency increases. One reason is that, over the long run at least, the British people in general will agree to maintain farm prices at stable levels only if they can receive the benefit of increased efficiency in return. And they can only receive that benefit in the form of lower prices. A second reason is that it will probably not be possible for the British economy to continue operating effectively enough for British goods to compete pricewise in world markets

without the advantage of relatively cheap food. Incidentally, high-priced food would tend to raise the prices of things which British farmers must buy. In the third place the government is obviously assuming that farm prices, though guaranteed and stabilized, will be capable of being reduced as time goes on. Were this not so it would not now be willing to provide the price and market guarantee. After all there must be some quid pro quo. Then again, apart from the requirements for international competition, it would seem that the British people simply could not afford to consume the amount and kind of food that the current nutrition program calls for unless prices were reduced. While it may be true, as some believe that British food consumers could and would continue their present scale of food purchases if the consumer subsidies were removed this could not be true over the long run. At the most it could only happen so long as the present relationship between the supply of consumer purchasing power and the supply of consumer goods and services in general continued. Finally the guaranteed prices would have to fall if the United Kingdom was to be prepared to permit anything like free entry to farm imports. Sooner or later food supplies from abroad will become available at much lower prices than those now prevailing. If and when this happens it will be impossible for the British government to guarantee prices above the levels of imported supplies. In this connection the statement of the Minister, Mr. Williams, to the effect that when or if significant supplies of outside oats became available, it would probably be necessary to either lower the guaranteed price or reduce the amount of the product to which it would apply is extremely significant. This would indicate that in the long run it will probably be necessary either to get British farming efficiency up and British guaranteed prices down to the world level or to arrange for higher world prices by some sort of international agreement. The really big question is can British farming become sufficiently efficient fast enough. One might add that unless, as time goes on, the government drops its guaranteed prices to or near the world levels, there will be no way of knowing whether British farmers are efficient enough to compete with outsiders or not. Indeed the general presumption will be that they are not. When one turns from the general matter of price considerations to the provisions aimed at efficiency, there are several points that seem worthy of special mention. To begin with, assuming that efficiency does increase, it must do so at a gradually

decreasing rate. The more slack is taken up the less will remain to be taken up. There will therefore come a time when the state can expect no greater efficiency. What will the state do then? Will the British people be willing to continue guaranteeing stable prices when there are no significant results in the way of extra efficiency to get in return? While such a question may suggest a problem too remote to warrant serious consideration at the moment, it is submitted that it is rather fundamental in character.

A second main point is that the program under discussion seems to place an unwarranted degree of reliance on the wider spreading of scientific knowledge as a means of getting greater efficiency. While much of such knowledge will help, efficiency depends also on the inherent managerial capacity of the farmer, on the amount of capital available, on the extent to which it is technically possible to obtain the optimum kind and amount of land, and on the ability to secure and make effective use of modern buildings and mechanical equipment. The problem is technical and financial as well as educational. Moreover you may have noted Mr. Duckham's statement to the effect that efficiency per man and per acre is already at a high level. This would seem to suggest that what is mainly needed is greater efficiency per unit of capital. Inefficient use of capital is probably mainly due to the fact that many of the concrete forms which capital takes are unsuited to modern farming requirements. And this, in turn, is traceable to the fact that the tremendous amount of new capital funds required for farm modernization is not available.

Again one cannot help wondering whether the farmers of the United Kingdom will ever be able to achieve the desired degree of efficiency so long as emergency conditions make it necessary for many of them to undertake a type of farming that is inherently unsuited to their soil and climate. In many cases the kind of farming being carried on to-day is not the kind for which the country and people are inherently best fitted. Despite this fact, because of the prevailing food demand and exchange situation, it will apparently be necessary to use these farms for several years at least in a way that is out of line with the principle of comparative advantage. This simply means that the special conditions prevailing will make it impossible to produce the things that can be supplied with any real degree of efficiency. While the emergency is the very period in which it is most necessary to achieve the desired degree of

efficiency it is also the period during which it is most difficult to do so. It is for this reason that the degree of permanency of the emergency period is so important.

Then again it seems hardly to be expected that the farmers who are unpaid members of the County and district Agricultural Executive Committees can devote any large part of their time to the work of the Committees indefinitely or in other than emergency periods. Any extensive participation would undoubtedly be reflected in a lessening degree of efficiency on their own farms. In the same way it is hardly to be expected that they will interfere seriously with their neighbors' methods. Indeed it is not anticipated that the threat of dispossession will contribute in any major way to improved efficiency. The very fact that the number of farmers dispossessed during the entire war period made up only 0.7 percent of the total indicates quite clearly that only secondary importance is attached to the compulsory provisions. The main reliance must and will be placed on economic inducement and intelligent persuasion rather than on compulsion.

It might also be suggested that any general policy aimed at economic improvement of agriculture which concentrates on the possibilities of securing efficiency in the realm of farm production and neglects the possibilities of effecting savings in the marketing sphere leaves something to be desired. In fairness, however, it should be stated that the part of the policy specifically designed to improve the marketing methods will undoubtedly be instituted at a later and more opportune date. In view of this probability the failure to incorporate it as part of the general agricultural policy represented by the 1947 Agriculture Bill may, to some extent at least, be overlooked.

There are one or two remaining comments of a general nature that should probably be made. For one thing it would seem that the possibilities of assuring markets at reasonable prices will depend very considerably on the extent to which it is found possible to concentrate on production of those commodities which have the most elastic consumer demand. In the second place it will probably not be possible to get too much in the way of agricultural stability by relying on any purely agricultural policy. Stability in agriculture, in Britain in particular, must assume continuance of a reasonable level of industrial stability. The future prosperity of British agriculture will depend mainly on the maintenance of stable condi-

tions of employment in the United Kingdom and on the foreign exchange situation. Finally, one might suggest that in the modern world no industry or nation can in the long run plan in isolation. Plans for individual industries must be integrated internationally. This means that the smoothness with which the plans for readjusting the agriculture of the United Kingdom are brought about will depend, in the last resort, on how successfully British agriculture can be fitted into the international framework. It is only necessary to add that these fundamental truths are very fully appreciated in the country under discussion.

THE INTERNATIONAL FEDERATION OF AGRICULTURAL PRODUCERS*

JOHN H. DAVIS
National Council of Farmer Cooperatives

FOR many years the four national farm organizations—The National Grange, American Farm Bureau Federation, National Farmers Union and the National Council of Farmer Cooperatives—have been interested in the promotion of increased world trade—particularly increased farm exports. Evidence of this has been shown by the interest and positions taken by these organizations with respect to such legislation as the McNary-Haugen plan, the various export debenture plans, the reciprocal trade proposals and the proposed tariff bills. More recently World War II has called to our attention the importance of international agricultural policy.

At the same time, there has been a growing concern on the part of the farm organizations regarding the attitude of the U. S. government, particularly the State Department, on matters affecting foreign trade of farm products. This is particularly true with respect to the activities of the State Department in planning the Food and Agriculture Organization (FAO) and the International Trade Organization (ITO).

In planning and conducting the Hot Springs Conference in 1943, out of which grew the plans for FAO, the national farm organizations of the United States were ignored and evaded by the U. S. State Department and the President. The result was concern on the part of farm organizations as to the future of American foreign policy with reference to agriculture.

Shortly thereafter the U. S. State Department announced plans for an international trade organization, the principal objective of which was to reduce trade barriers. Again farm organizations felt that the State Department evaded them in evolving plans for the ITO. The result was a suspicion that agriculture might receive the brunt of trade barrier reductions as compared with other forms of American business. The position of the farm organizations was not that of opposing the main features of the FAO or the ITO

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programs, but of keen resentment over the way they had been ignored and evaded by the State Department.

Into this setting in March, 1945, came a delegation from the National Farmers Union of England and Wales, making a good-will tour of Australia, Canada and the United States. During the course of their visit to the United States, James Turner, chairman of the delegation, proposed to the U. S. farm leaders the formation of an international organization of national farm organizations for the purpose of assisting, guiding and influencing farm policy at the international level. In brief, the proposed international organization would bear the same relationship to government in the international field as do national farm organizations at the national level.

In the fall of 1945 the National Farmers Union of England and Wales invited the interested national farm organizations of the world to meet in London in May, 1946, to discuss agricultural problems and the formation of an international producer organization. All four of the national farm organizations of the United States accepted the invitation. At this conference there was created a provisional organization to function for one year with headquarters in London, known as the International Federation of Agricultural Producers.

In May, 1947, the members of IFAP met in Scheveningen, Holland, and organized IFAP on a permanent basis, retaining the name "International Federation of Agricultural Producers." The headquarters will remain in London at least for the current year and probably until the permanent home of FAO is established.

Organization of IFAP

IFAP at present has members from 17 Nations. Four organizations from the United States hold direct membership—namely, the National Grange, American Farm Bureau Federation, National Farmers Union, and the National Council of Farmer Cooperatives. The organizations from any one nation together have one vote. If unanimity is lacking within a national delegation, the vote may be cast on a fractional basis. Major policy is to be formed at an annual meeting or "council" of the member organizations. In the interim between annual meetings, action may be taken within the framework of established policy by the executive committee. The presi-

dent is elected annually by the members. At present this position is ably filled by James Turner of England.

IFAP as a farm organization serves as a conference body; it serves as a mechanism for bringing interested groups together on mutual problems; it serves as a clearing house and contact office for its members; it serves as a mechanism whereby international farm policy can be crystallized and implemented. On matters where there is virtually unanimity of policy, IFAP may represent its members or speak for them. On matters where there are differences of opinion between members, IFAP can be of greatest service in helping its members or groups of members to put forward their own views.

IFAP is beginning its operations on a modest budget of about $75,000 per year. Of this not more than 25 percent can be assessed against the members of any one country.

IFAP Annual Conferences

The two annual meetings of IFAP have, I believe, gotten the organization off to as good a start as could be expected. They have been attended by delegates and observers from some 30 nations. The spirit of the meetings, which is perhaps the best barometer, has been excellent. Committee assignments, in general, have been taken seriously. There has been a complete absence of underhandedness or intrigue or petty politics. On the whole the farm representatives of the world speak a common language despite their use of different tongues. With minor exceptions the farm leaders of the other countries of the world are seeking a basis for a sound agriculture which for the long pull will be self-supporting without charities from other countries. Significant in this connection is the fact that at the 1947 meeting the principal subcommittee of the policy committee was one to pursue methods of farmer self-help through cooperation. Approximately one-third of the policy report dealt with the subject of cooperative self-help. And, may I add, that the initiative for such action did not have to come from the United States.

In contrast to this the FAO meeting at Copenhagen in 1946, which I attended as a member of the U. S. delegation, concerned itself primarily with governmental devices of international assistance to world agriculture—particularly through a world food

board. I do not cite this fact to be critical of FAO but to emphasize a fact which I believe is true; namely, that the farm leaders attending the IFAP meeting were thinking more realistically and practically in terms of maximum farmer self-help than were the government representatives who headed the various delegations at the meeting of FAO.

In saying this let me explain that the U. S. delegation did not approve the plan for a world food board, but instead submitted a plan for coordinated national assistance in the form of education, technical assistance, and sound financial assistance supported by international commodity arrangements if and when such may become necessary.

At the beginning of this discussion I mentioned the refusal of the U. S. government to work with farm organization leaders at the Hot Springs conference or at the ITO conference. At the recent FAO conferences such policy has not been pursued. On the contrary, at the FAO conferences at Quebec, Copenhagen and Geneva, representatives of each of the four national farm organizations, as well as the ranking members of the agricultural committees of the House and the Senate, have been included on the U. S. delegation. Personally, I feel this policy has been wise. It has resulted in a better understanding between the administrative departments of government, Congress, and farm leaders. Not only this, but I believe a sounder policy has been evolved as the result of the pooling of the combined information and judgment of the several interests comprising the U. S. delegation.

At the IFAP conference the representatives of the four U. S. farm organizations worked together as a team. The four organizations are in fundamental agreement on most all issues which arose at the conferences. Because of the numbers of committees it was not possible for each organization to be represented at all committee meetings. The plan followed was for those attending to represent the entire American delegation. This practice was facilitated by daily early morning caucuses by the U. S. delegates at which the issues of the day were anticipated and the U. S. position determined. As a by-product of this teamwork on international problems, I believe that the farm organizations of the U. S. are gradually learning to work together with increased confidence on the domestic front.

An Appraisal of IFAP

It is extremely difficult to appraise the value of a new organization such as IFAP. Obviously much will depend upon the ability and statesmanship of its officers and policy makers in the initial years. My own opinion is that IFAP's most important role for the present is to promote understanding and friendship between the farm leaders of its member nations. This can be done by conducting an annual meeting of members, by arranging and assisting committees composed of representatives of members to study common problems, by facilitating concerted action among nations on common problems, by advising and conferring with United Nations and its component organizations—particularly FAO and ITO. If this is done, gradually a better understanding and a greater trust will develop among the farm leaders of the nations of the world. If IFAP can keep the emphasis on points of agreement rather than disagreement, gradually the area of agreement developed in 1946 and 1947 can be broadened. Probably IFAP's greatest danger will be the desire to want to move too fast and in doing so will bring about a cleavage among its members.

I doubt that in the near future the farm organizations of the U. S. will expect IFAP to try to influence United Nation's policy in their behalf. I believe farm organizations can be more effective in influencing the position of our State Department and of U. S. representatives at United Nation's conferences than by trying to influence United Nation policies directly or through an international organization. It may be that at times such a course can be pursued multilaterally as well as unilaterally. That is, farm organizations of several countries may agree on a policy and then each go home and seek to establish such policy by working through the U. N. representative of their respective nations. Of course, should the members of IFAP be unaminous on a subject, then IFAP could itself take the initiative in conference and in negotiation.

As I said earlier, the delegations of the different countries have seen different possibilities in IFAP. Perhaps the majority at the first conference had the hope that the federation could become a hard hitting farm organization which could make the units of the the United Nations toe the mark in complying with the wishes of the farmers. At the recent conference there was a desire on the part

of some delegations to have IFAP demand that the international wheat agreement draft of April 23, 1947, be ratified by the nations of the world. Other countries have seen in it the hope of implementing an international new deal for world agriculture based on a worldwide program of aid flowing from so-called surplus countries to needy countries.

However as discussion progressed at the conference, there was a gradual shift of emphasis from direct action through IFAP to collaboration through IFAP supported by concerted action at the national level. I think this has been a wholesome development in that it permits IFAP to keep its major emphasis on points of agreement. To put it another way it permits IFAP to avoid choosing between its members when they cannot all agree. For emphasis I repeat that IFAP's greatest job in the near future is to serve as a media for promoting better understanding among the farm organizations of the world. If it can succeed in this, probably it may ultimately lay the basis for an international farm organization of the action type if conditions of the future show the need for it.

Today the world is still experimenting with international government. The high hopes expressed for United Nations at the time of the San Francisco conference are as yet far from realization. I have the feeling that the common people of the world want to live together in peace, but that the governments of many parts of the world do not honestly express the desires of their people. Possibly through voluntary organizations of the people, such as IFAP working in cooperation with government, we can come closer to our goal.

STABILIZATION OF THE GENERAL PRICE LEVEL*

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THE proceedings of this Association have long indicated its interest in a more stable price level. It has been recognized that a more stable price level is essential to the prosperity of agriculture and all the other segments of the economy. When a material change in the general price level occurs, the price of some products changes more rapidly than others. This results in serious dislocations of the economy, particularly when the price level declines. Farmers more than any other large group are vitally affected by a change in the general level of prices. When prices in general decline, the prices of farm products, along with other raw commodity prices, decline more rapidly and the most. Commodities used in farm production fall more slowly, resulting in a price disadvantage for agriculture. If the price level continues on the lower plane, farm commodity prices and items used by the farmer in production are slow to come into adjustment again. With farming, a business of slow turnover and narrow margins, such price disparities place agriculture in a serious financial condition.

It is realized that greater stability of the price level will not solve all of our economic ills, but it is a prerequisite to developing workable agricultural programs. It is likewise realized that many of the war-created inequities in the price structure will have to be corrected and price relationships brought into a more normal balance before a program of greater stability can be made effective. However, now is the time for the nation to adopt such a program in order to avoid unreasonable price fluctuations in the future.

Wars are the great disturber of prices. There does not seem to be any way to fight a war with stable prices. Therefore, any price stabilization program would likely be disrupted by a war.

Perhaps a word of explanation of why the writer of this paper is dealing with this most involved subject is in order. During the year of 1945–46 I was on leave from Purdue University with the Research Department of the American Farm Bureau Federation. The American Farm Bureau Federation has long recognized the

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importance to the American farmer of a more stable price level. They asked the Research Department to make a study of what policies they might support that would add to the greater stability of the general price level. After reviewing the literature, an outline setting forth the various approaches to the problem was prepared. Conferences were then arranged with various groups of economists at a number of Universities, with the Federal Reserve Board, the Committee for Economic Development, The Bureau of Agricultural Economics, and with individual authorities to consider the merits of these proposals along with any others that might be suggested. A total of some forty authorities were contacted. These conferences were arranged and attended by Dr. T. K. Cowden and myself. Joint meetings were also held with a committee from the American Farm Bureau Federation Board and certain authorities. However this paper represents the writer's personal opinions gained from this study and these contacts. The official position of the American Farm Bureau Federation may be found in their last year's resolutions.

The proposals for adding greater stability to the general price level may be grouped under three main headings: first, those dealing with the control of money and credit; second, those dealing with changes in the gold content of the dollar, exchange rates, or changes in the commodity or commodities back of the dollar and third, those centering around federal fiscal and budgetary policies. These three approaches should not be considered necessarily as alternatives. They are all inter-related, and such differences of opinion that prevail as to the effectiveness of each approach rest partially upon the degree of emphasis the different groups of individuals would place upon each proposal. Those emphasizing the fiscal and budgetary approach likewise recognize in most cases the importance of a coordinated attack from the other standpoints. In the following discussion each of these approaches is presented, together with a proposal for coordinating the monetary and fiscal policies with the international financial policies under one authority.

There are also a number of other factors significantly related to these three main divisions, such as those centering around international trade relationships, antimonopoly programs, and wage policies. The international trade phase will be treated briefly later. An aggressive and intelligent program to control monopoly,

especially monopolies that prevent price adjustments is highly desirable. The adoption of a wage and labor policy which recognizes the relationship between productivity and prices is also essential.

Although the use of new governmental techniques is involved in the proposals for adding greater stability to the price level, it should be recognized that control of the monetary, credit, and fiscal policies should rest in the hands of the Federal Government, as is prescribed by the Constitution. Therefore, the problem is not one of delegating additional authority to the Federal Government in new areas, but rather one of reshaping and coordinating the policies in the field in which government policy now largely prevails so that they will more definitely contribute to a stable price level. Unless some success is attained in adding greater stability to the price level and the general economy, the alternative is likely to be attempts to control many individual commodity prices through more detailed types of regulation and regimentation. Governmental controls in the monetary, credit, and fiscal policy fields have the advantage of being less personal. They do not require special detailed programs that reach out and control the activities of individual farms and businesses.

To some this approach may appear as though one is proposing getting on all the horses and riding off in all directions at once. However, the solution in the judgment of most authorities contacted rests on riding more than one horse and in keeping all the horses going in the same general direction. Very few believe there is any automatic formula for maintaining a stable price level. It should be pointed out that with our present knowledge, the possibilities, likewise, in this area appears to be more of lessening the ups and downs of general price movements than of bringing about complete stability.

Money and Credit Controls

Before the passage of the Federal Reserve Act in 1913 one of the major problems in the field of money and credit was that of supplying adequate credit for all sections of the country, particularly at certain periods. With the passage of the Federal Reserve Act the problem shifted from one of a lack of credit to one of credit control. Under the Federal Reserve System the expansion and contraction of credit has been to a large extent dependent upon the decisions of the millions of bank borrowers and the thousands of

banks in the nation. The Board of Governors of the Federal Reserve System has used in the main four methods to influence this expansion and contraction of credit, namely: reserve requirements, the discount rate, open market operations, and persuasion. Certain types of selective credit controls have also been used more recently.

These controls have not proven too effective, and as a result a number of monetary economists have proposed that the volume of credit should be regulated by some prescribed means to the greater interests of national welfare, instead of leaving the changes in volume of credit to the individual decisions of thousands of banks and millions of borrowers. They have felt that the changes in volume of credit, as they have occurred in the past as a result of this policy, have tended to add to the instability of prices rather than to increase their stability.

The proposal of the late Professor Irving Fisher, of Yale, for 100 percent reserves has been one of the most widely publicized suggestions for controlling the volume of credit. Many competent monetary authorities agree with Professor Fisher to the extent that they believe the shrinkage of bank credit from 1929 to 1933 contributed to the intensity of the depression. They do not say it was the cause of the depression. Rather, they make the point that after the depression was under way, the shrinkage of some eight billion dollars in demand bank credit acted as a further contributing force to depress prices. The Federal Deposit Insurance Corporation, which insures individual bank deposits up to $5,000, should be a factor in helping to avoid such a decline as occurred in bank deposits between 1929 and 1933.

War financing to the extent that it has been carried on through the banking system has automatically resulted in the banks holding a large amount of government securities which makes it more feasible to move in the direction of 100 percent reserves than before the war. The holdings of government securities by all banks at the end of 1945 equalled approximately 61 percent of their total deposits and approximately 96 percent of their demand deposits.

During the war-financing period and since, the Federal Reserve banks have stood ready to purchase the government's bonds from the banks when they desired to increase their reserves. This program has resulted in maintaining relatively low interest rates. As long as such a program is carried out, there is practically no limit to the volume of credit expansion. Unless direct controls are to be

maintained on prices, then, it seems that more effective control of bank credit must be regained by the Federal Reserve System. Greater control of bank credit is important not only to avoid undue expansion in periods of high business activity, but also to avoid undue contraction in periods of low business activity.

Proposals have been made for obtaining this control of further credit expansion and at the same time moving in the direction of 100 percent bank reserves. This proposal calls for allowing federal bonds to be held by banks as legal reserves and in turn raising the legal reserve requirements of the banks. Under such a program the bonds now held by the banking system would be stamped or exchanged for new bonds, and such bonds would be eligible for legal reserves with the Federal Reserve banks at any time. Raising the reserve requirements would offset the increase in reserves thus created. This would make it possible not only to check undue bank credit expansion, but also to avoid contraction during less favorable periods.

Federal securities held by the general public then could be allowed to seek their normal interest rate, or at least not be supported above par. Allowing these interest rates on the publicly held bonds to rise and the value of the bonds to decline to a little below their par value would induce more of the public to hold them, rather than shifting them to the banks and increasing the inflationary pressures. A corresponding rise in the interest rates on time deposits might also occur. Such a change would also be an inducement to keep funds in time deposits, rather than shifting them to areas that would contribute to inflation.

A number of economists believe continued attention should be given to the development of more selective types of credit controls. The present policy relative to loans on securities is an example.

A number indicate the desirability of the policy of limiting installment buying during periods when demand is excessive and of allowing more freedom in installment buying during periods when the demand is low. Others would direct all efforts to controlling over-all bank credit expansion, with the assumption that the overall credit situation would controll all of the various types of credit sufficiently. There seems to be little difference of opinion on the theoretical desirability of controlling the volume of installment buying from the standpoint of adding greater stability to demand and prices. There is a recognized important social question involved in limiting

the purchasing power of those least able to compete during periods of excessive demand by restricting installment buying in such periods. We will take steps to avoid a depression but are hesitant to take steps to avoid a boom.

Attention has been directed to the inflationary effect of large purchases made possible in the United States by the granting of foreign loans to the various nations and the rapid liquidation of the dollar balances accumulated during the war. Such purchasing power competes with the domestic purchasing power and adds to the already excessive demand existing under present conditions. Some felt that consideration should be given to coordinating and timing the demand so created by the foreign loans as to limit as much as possible the undue pressure on prices during periods of excessive demand such as we are now experiencing, and to increasing demand during periods of depression.

Varying the Gold Content of the Dollar, Exchange Rates, and the Commodity-backed Dollar

During the 1920's and early 1930's much emphasis was placed in certain quarters upon the proposal of varying the gold content of the dollar as a means of stabilizing the general price level in the United States. The theory of this group was that gold has value in the world markets the same as wheat or any other commodity and that if the United States dollar represented a smaller quantity of gold, it would be worth less and prices would rise. If the quantity of gold was increased in the dollar, it would be worth more in terms of other things and prices would fall. Therefore, a stable price level could be maintained by varying the gold content of the dollar.

Many of the economists consulted took the viewpoint that this method of stabilizing prices might be reasonably effective for a small country with an appreciable amount of trade. However, the majority did not feel that such a procedure could be followed or that it would work successfully for the United States. They believe that we now represent such a large proportion of the world's production and of the world's trade and hold so much of the world's gold, that any change in the gold content of the dollar would likely result in a marked change in the value of gold itself. As one economist put it, "The United States dollar has value in the world today because of the amount of goods which it will supply, and gold has value partially because of the number of dollars a given amount of

gold will buy, rather than the dollar has value because it gives title to a certain amount of gold." In other words, gold is partially in the same position as silver, its price being somewhat dependent upon the monetary price the United States government establishes for it.

Dr. Charles L. Prather in his book, "Money and Banking," perhaps sums up the present thinking of a large group of monetary authorities relative to the position of gold in determining prices.

> In every country in the world, the quantity of gold money is but a small percentage of the total volume of currency and bank credit commonly used as media of exchange. The purpose of the gold standard is to limit fluctuations in the value of money, but, to an increasing degree, the volume of credit and currency now affects and perhaps even fixes the value of gold. In other words, the tail now wags the dog. This situation demands that more attention be given to conditions which determine the supply of and the demand for money and bank credit, but it does not mean that the "baby must be thrown out with the bath water."
>
> . . . Businessmen want a fool-proof and knave-proof monetary system without knowing exactly what one is, but they usually think of it in terms of the gold standard. Irrespective of its merits, no type of standard will be successful unless there is general confidence in it. The gold standard has the confidence of business leaders and bankers. . . .

This group would further point out that from the experience with the gold standard during the interwar years and with the establishment of the present Monetary Fund, it would not seem likely that a rigid adherence to any gold price ratio or fixed exchange rates will be allowed for long to depress world price levels. On the other hand, it does not seem likely that the United States, as a great creditor nation and center of trade, can go so far as attempting to stabilize its internal prices through the procedure of changing the quantity of gold in the dollar and of constantly varying exchange rates. A nation such as the United States, to which a major share of the international dealings of the world gravitates and to which many exchange rates are tied, is in the least favorable position of all countries to use this procedure. Changing the gold content of the dollar and the exchange rate to avoid undue pressures from international prices is one thing, but using them as a means of controlling internal prices and offsetting other factors in the economy of the United States is quite another.

The majority of those contacted look upon the role of gold in the postwar period as one of stabilizing and providing for orderly international exchange, rather than being used as the dominant

factor for controlling the internal price levels of the major nations. This statement recognizes that there is a close alliance between stability of exchange and stability of the internal price levels of the various countries. However, in stabilizing the internal price level of a country other factors, such as fiscal policies and many others, must be taken into consideration.

In light of the discussions and viewpoints expressed, it would appear that consideration should be given to authorizing a central monetary authority to vary the gold content of the dollar within certain prescribed limits when it was believed that it would add stability to prices. Such changes should be made in cooperation with officials of the Monetary Fund. My experience in working with farmers leads me to believe they would be hesitant to give up the idea that we might have to devalue again at some future date. In my opinion we shall probably devalue at some future date. The history of other nations would bear this out.

In view of this agreement and suggestions of the individuals consulted, it is suggested that a central monetary and fiscal authority, charged with additional measures for stabilizing prices, should be responsible for making recommendations and taking action in this area.

This authority should have the power, under proper prescribed rules and limitations, to adjust exchange rates when it is believed they would contribute to the stability of the desired level of domestic prices.

Certain individuals, including Benjamin Graham of New York and Professor Frank Graham of Princeton, have endorsed a commodity-backed dollar and made definite recommendations for carrying out such a program. More recently such a program has been recommended by both the Messrs. Graham and a number of other prominent economists on a world basis. There are some who would maintain that we have three basic problems in stabilizing prices and the general economy—the maintenance of the prices of basic commodities, the support of the capital goods industries, and the long-time secular trend in prices. While the Graham plan for domestic stability is not without merit, there are many difficulties in putting it into practical operation as compared with other programs for domestic price stability. The storage and stability concept does appear to have more merit, when considered on an international basis, as an alternative to cartels and commodity agreements.

Fiscal and Budgetary Policy

The majority of the economists consulted felt that fiscal and budgetary policies will be the dominant factors in maintaining a more stable price level and the general economy in the postwar period. The federal budget in 1946 was about 25 percent of the national income as compared to 5 percent during the nineteen-twenties. It is generally recognized that in order to obtain greater stability of the price level and the general economy at desirable levels, it is necessary to obtain greater stability of the over-all demand. The level of demand for any given period depends upon total spending, which is of two kinds, for consumption and for investment. What people spend on consumption makes demand. What they save makes demand only as it is invested, which means not buying existing bonds or shares of stock, but expenditures which add to the actual capital facilities of a nation, such as factories, machinery, ships, or increasing the stocks of raw materials. One of the major causes of variation in over-all spending is the variation in expenditures in the investment field. In 1927, 11.1 billion dollars were spent in this country on new construction, and by 1933 this had fallen to 2.4 billion dollars. It appears that a nation with a high standard of living, such as the United States, where a relatively large proportion of the productive resources is devoted to the production of durable consumer goods and to new investments, is subject to greater demand changes than a country with a lower living standard which currently consumes a high percentage of its total annual production.

One of the problems in connection with this variation in investment rests with the fact that the decision to save is often made by one group of people, and the decision to invest by another. If the people of this country decide to save ten billion dollars, and a corresponding group decides to only invest five billion, then the spending stream or demand is reduced by five billion and the national income falls by five billion dollars. The total demand includes the demands of 35 million households, millions of businesses, and thousands of government bodies, federal, state, and local. As this demand is dependent upon many factors, it cannot be turned off and on like water. But the operation of the federal government exerts a continuous influence upon the level of this aggregate demand, and it is proposed that the federal fiscal policy be handled in such a manner as to add greater stability to demand.

The management of the national debt and the governments'

taxation and expenditure policies all affect the over-all demand and expenditure stream of the nation. Through its public outlays and expenditures the government is constantly putting cash into the hands of the public; and through taxation and bond sales taking it away. To the extent that the funds for expenditures are obtained by deficit financing through the sale of bonds to the public, there is no corresponding decrease or increase in net Public Purchasing Power.

If the deficit financing is carried on through the banking system, the public's bank deposits are increased. Since no corresponding decrease is caused by taxation and bond sale this process results in a net increase in Public Purchasing Power. The transfer of funds by these processes to different groups in society, however, may materially affect the current expenditure stream of the nation. When federal taxation and expenditures are brought into line so that payments may be made on the national debt, whether these payments go to pay off federal obligations held by the banks or by the public is likewise important in affecting the expenditure and investment stream. A shift of the debt from the public to the banks, or vice versa, also has important effects upon the purchasing power of the public.

Increasing the Flexibility of the Tax Program

While the importance of making payments on the public debt is well recognized, the maintenance of the national economy at reasonable levels is even more necessary. With the recognition of these factors and the increase in the size of the federal debt and budget, it has been recommended that the fiscal policy be directed toward increasing the stability of the economy by adopting a long-time policy for the reduction of the national debt, and at the same time introducing greater flexibility in the tax program in order to stabilize the economy through various measures. It has been proposed that Congress enact the necessary legislation and the Bureau of Internal Revenue prepare the necessary machinery so that personal income tax rates could be revised promptly if and when necessary, within certain limits. It has also been proposed that corporation taxes should be put on a "pay-as-you-go" basis, the same as individual taxes are now, and later made flexible to encourage investments in depression periods.

Under such a procedure tax returns would be increased during

inflationary periods, or when the demand stream was large relative to the supply of commodities available or the productive resources. When demand fell off the rates of taxation would be decreased. Thus taxation would be used as a counter business cyclical force. The object of passing the power to change rates within certain limits to the Treasury is to speed up the rapidity with which the counter-cyclical forces could be used. If it were necessary for Congress to take action, considerable time would necessarily elapse between the time when such action should be taken and when the change would become effective. Timing is important if such flexibility is used. The real problem lies in encouraging private business. Tax adjustments and government spending should only be stop gaps.

While most individuals would agree that theoretically these adjustments in tax rates are desirable from the standpoint of counteracting the instability of business activity, some question the unsettling influence of varying tax rates upon corporations and business. They argue that with the maintenance of stable rates considerable variation in tax collections would occur because of the lower taxable incomes in periods of low activity and the much higher taxable incomes in periods of high business activity. Certainly the maintenance of a stable rate would be a marked step over our past policy, when we increased the rates in periods of low business activity, and decreased them in boom times. It has also been proposed that special tax adjustments be made in times of low business activity to encourage new investments on the part of corporations.

Prompt payment of tax refunds would be necessary under any flexible system of taxation used to steady the economy. Under present procedures considerable delay occurs, which partly offsets the automatic reduction which occurs with changes in income and with any change that might come through the introduction of change in rates.

Some individuals put forth the view that the problems of introducing flexibility in the taxation rate are so great that they favor balancing the budget in boom and normal times at above requirements, and in periods of low national economic activity turning to deficit financing through increased governmental expenditures. From the practical standpoint, much can be said for this view. The problem of transferring from Congress to an agency of government

the right to vary taxation rates, even within limits, is a very practical political problem. On the other hand the problem of getting any practical governmental spending programs into operation rapidly are also difficult. If such powers are not transferred to an agency of the government and if the changes are dependent upon congressional action, properly timing these changes would be very difficult.

Flexibility of Government Expenditures

During booms or periods when demand is excessive, government expenditures should be reduced to a necessary minimum. When demand and the level of business activity are low, it is proposed that governmental expenditures be increased. The public has come to look upon increased government expenditures as the means of meeting unemployment; therefore, the question of whether this method should be used to combat unemployment and stagnation in business is probably academic. The real questions are at what stage this procedure should be used, and how and in what areas should the expenditures be made.

The volume of new federal construction should be limited when demand is excessive. Federal grants to states and local governments for non-critical public works should be eliminated during such periods. Local communities also should be discouraged from undertaking unnecessary expenditures when demand is excessive. A large shelf of essential public works should be created which may be developed when demand is deficient. Such demand may be stimulated by federal financing and investment, and through financial inducements to state and local governments.

It has been pointed out that such expenditures should not be used too quickly before other measures have had time to work, but on the other hand increases in government expenditures should not lag to the extent that the economy has fallen too low, or the problem of recovery is too great. State and local government expenditures should be coordinated so that increased spending on the part of the federal government is not offset by actions of the state and local governments. Projects so far as possible should be of the self-liquidating type, and should contribute to the national welfare. The rural electrification project has been cited as an example of this type of project. It is likewise important that projects be selected which interfere as little as possible with private enterprise. Otherwise the unsettling effects on private enterprise may restrict

investments in the private fields and offset the government's spending and government projects.

Certain individuals called attention to the importance of extending the period for which unemployment compensation is paid as a business counter-cyclical force. Government payments to farmers during periods of low business activity likewise act as a counter-cyclical force. Both measures would work as forces to increase the demand stream when it was low.

There seems to be general agreement that if the national economy is to be kept at reasonably high levels, the current expenditure stream and the new investment flow must be kept high, in that income can be no greater than the expenditures. Periods of declining business activity and unemployment occur when new investments decrease. The problem under such circumstances is by some means either to increase the private investments or to take up the slack by government investments. Those approaching the problem from the budgetary and fiscal standpoint take the view that during periods when private investment cannot be stimulated, government investment and deficit financing must take its place. These individuals recognize that this increases the national debt, but place it in second importance to maintaining reasonable employment and national income.

In addition to action in these three fields the Nation should cooperate with the various international organizations to bring about international stability of prices, the orderly adjustment of exchange rates, and foreign trade. Cooperation with the International Monetary Fund and Bank in stabilizing world prices and the orderly adjustment of exchange rates is essential. The volume of foreign loans and the timing of purchases should be coordinated so far as possible with the level of business activity of our internal economy. Consideration should be given to the development of international programs for stabilizing basic commodity prices on a world basis. We should adjust our domestic policies and cooperate with international organizations designed to enhance the exchange of goods and services among the nations of the world upon a self-perpetuating and sound financial basis.

The Coordination of Monetary, Credit, and Fiscal Policy

There is general agreement that the monetary and credit policies of the government should be coordinated. Most people contacted felt that there was a need to establish a monetary authority with

power to coordinate the control of money, credit, and fiscal matters under one authority. Some feel that it would be impractical for the monetary authority to have other than advisory powers relative to fiscal and budgetary policy. The monetary authority should be an independent agency, the members of which should be appointed by the President and confirmed by the Senate. The Secretary of the Treasury and the Governor of the Federal Reserve Board should be ex officio members of the authority. In addition to coordinating monetary policy affecting the domestic economy, it should also be the responsibility of this authority to coordinate monetary policies in respect to the administration of foreign loans and actions taken relative to the administration of the International Bank and Monetary Fund.

While the monetary authority should be given broad powers, its policies should be limited as far as feasible by formula. In order to promote a dollar of constant purchasing power, the formula could be based on some established price index. The law creating the authority could direct it to take action when the index reached certain levels—that is, if prices dropped below a certain point the monetary authority would be mandated to bring into operation the appropriate facilities under its command in order to prevent further decline in prices. Likewise, if the price index increased above a certain point, the monetary authority would be mandated to apply such techniques as would discourage further increases in the general level of all prices. This authority would not have jurisdiction over the price of individual commodities, but would confine its operations to the basic underlying factors affecting the general movement of all prices.

It is recognized that there are many administrative and political problems, as well as conflicting interests in developing a monetary authority. This paper deals primarily with the various economic devices which might be used in obtaining greater stability rather than the administrative machinery.

Summary

In summary, the problem of adding greater stability to the price level involves: more controls over the expansion and the contraction of money and credit, the adjustment of the gold content of the dollar and exchange rates in cooperation with other nations when necessary, the management of the debt, the taxation and expendi-

ture policies in such a manner as to add to price stability, and a coordinated economic foreign policy. In order to coordinate and to insure more prompt action in these related fields, a monetary authority should be established with clearly defined responsibilities. I should also like to add that this problem has plagued this nation and other nations of the world for generations. During this last generation I believe we have definitely increased our knowledge of the forces affecting prices. Nevertheless I recognize full well that our grandchildren will be wrestling with this same problem.

EFFECTS OF EMPLOYMENT UPON FACTOR COSTS IN AGRICULTURE*

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IT must seem a bit old-fashioned to discuss costs. Perhaps it is a longing for the quaint ideas of the past—a nostalgia for the good old arguments over cost of production, comparative costs, opportunity costs, and all their kith and kin. Or is it to escape the realities of the day? What, after all can cost tell us about maintaining high employment and full production? A discourse on full production is so much more modern than is a discussion about costs. It has become fashionable to deal with aggregates—aggregate income, employment, investment, savings, and the like. Aggregate costs however have little or no meaning except when viewed as income. When viewed in relation to competitive prices, they are meaningful but essentially negative in that they indicate certain upper limits to the productive efforts of firms. Full production on the other hand states a desirable goal. It implies a positive objective for policy. It presumably has meaning, and it certainly has wide appeal.

One might ask: Why be concerned about costs if we can achieve full production without doing so? This question can be put more specifically: Does it matter if particular costs are reckoned to be low or high as long as the National Economic Budget reaches, as it did at midyear, a rate of 225 billions, giving us a national income of 200 billions with 60 million jobs, with corporate profits after taxes at 17 billion dollars, and with cash farm income running at 30 billions? Why then focus on cost? After all, one man's cost is another man's income.

The older concern about costs—costs broadly conceived in relation to competitive prices in achieving long-run economic efficiency—gave way during the thirties to concern about income. This change occurred as economic thinking shifted its attention to the causes of mass unemployment. The fuller utilization of resources occasioned by the war and by the pent-up demands since the war, appears to have brought us back to considerations of costs, although not as yet fully appreciated. Fashions do change. But there is a kind of seasonal rhythm in the emphasis that is put upon either

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

costs or income, not unrelated to the changing state of the economy. In any event now the season of cost is upon us.

One observes that the transition from a deficiency in the aggregate demand necessary to support the economy at full production to excesses in that demand, like the North Atlantic in October, is often very rough. American agriculture, however, has had good sailing so far, as it usually does during the early stages of a big bulge in the national income. The income from farming has soared higher and faster than have costs in agriculture. Many consumers, however, have already been squeezed by the high cost of living especially those whose income has been less elastic than food prices. Nor does anyone believe, so I suspect, that agriculture will be spared for long as costs affecting agricultural production continue to advance. The real rub will come when farm prices fall from the post-OPA pinnacle to a more normal long-run relationship to other product and factor prices in the economy. It is therefore quite fitting and perhaps really not old-fashioned to enter upon a discussion of cost in agriculture at this time.

I

It is quite evident from the pages of the *Journal of Farm Economics*, and from studies that have appeared in recent years including *The Land-Grant Policy Report* that developments affecting the cost side of agriculture have been, except for some work in farm management, grossly neglected; costs have been over-shadowed by a rapid growth in demand, by inflation and by the price leadership of farm products in the upward spiral of prices. Quite understandable, as a reaction to the depressed thirties, the state of employment has been viewed as the king pin, and many have been of the belief that it provided the necessary and sufficient conditions for an efficient, stable and prosperous agriculture.

We obviously have experienced a remarkable change in economic tempo since 1940: The American economy has shifted from very low to high employment, from about 47.5 to 60 million employed civilians, and a drop in the unemployed from about 15 to 4 percent of the civilian labor force.[1] It is against this background that I offer a few, tentative, reflections on how employment affects factor costs in agriculture. In this paper I am more interested in a meaningful

[1] From Table VII, page 67, of the *Midyear Economic Report of the President*, July 21, 1947, Washington, D. C.

formulation of this problem than in any specific quantitative results.

The economic effects of changes in employment in the non-agricultural sector of the economy are transmitted into agriculture in three ways. One of these is via income because changes in income affect the demand for farm products. We shall call this the *income effect* of employment upon agriculture. Another occurs as a consequence of changes in the cost (per unit) of the products that are produced by the non-agricultural sector that farm people buy for consumption and for production purposes. We shall refer to this as the non-agricultural *product (and service) price effect* of employment upon agriculture. The third of these arises from the effects of changes in wages in the non-agricultural sector on wages and on other factor costs in farming. We shall view this as the non-agricultural *factor price effect* of employment upon agriculture. Furthermore, there are the interactions of these several effects as the economy adjusts in going from low to high employment as has occurred since 1940.

Farmers become aware of these effects by stages. As the national income and employment expand, they first feel the bigger demand, stimulating like a warm spring rain. There is a promise of prosperity in the air. Production plans are revised upward. There soon follows, however, out of the non-agricultural sector a rise in costs as the things farmers buy go up, and there is also the bidding away of some of the factors that farmers use. The awareness of agricultural economists of these stages has followed about the same time-table.

How much do we know about the nature of these three types of effects and their interactions? My belief is very little. We have for the most part neither the analytical equipment nor the data to come up with conclusive answers at this time. We can, however, indicate in a rough fashion certain conditions that are relevant in formulating this problem and the circumstances that appear to exist.

II

On Income Effects. One of the remarkable changes that has occurred in the American Economy since 1940 is the expansion of income. Labor income has risen from about 49.5 billions of dollars in 1940 to an annual rate at midyear of 1947 in the neighborhood of 119.5 billions of dollars.[2] Even after allowing for the marked ad-

[2] From the *Midyear Economic Report*, Table III, page 63.

vance in prices, the real aggregate income has probably risen upwards of 50 percent. If we leave aside for the moment labor income and take disposable personal income and adjust for the rise in consumer prices, and for the increase in population, the per capita increase in terms of 1944 dollars has been from 719 to 956 dollars,[3] or about 33 percent.[4]

Inasmuch as a substantial part of Chapter III of my *Agriculture in an Unstable Economy* was devoted to an analysis of the role that income elasticity plays in the growth of demand, I shall restrict these remarks to certain of the cost implications of this growth. To avoid the complications that arise from other developments that have occurred, let us simply suppose that the high employment has increased the income per head substantially (say 10 percent) without changing in first instances the general level and the relative position of product and factor prices. For convenience let us take two classes of farm products, namely, Class A, consisting of products with an income elasticity of 1.0, and B with a negative income elasticity of -1.0. The cost implications are fairly straightforward. Presumably approximately 10 percent more of product A can now be sold at the former price while about 10 percent less of product B will move at the old price. If the price elasticities of the two classes of products are low, the transition adjustments in supply will be complicated by a sharp rise in the price of product A along with a similar drop in product B. In general the cost of resources suitable to the production of A will rise and conversely for those used to produce B. The more specific the resources, the greater the change in cost. Under these circumstances, it follows that the key to changes in factor costs, as always, is to be found in the marginal rates of substitution of the resources involved.

To retrace our steps, then, we began with the effects of an increase in income; we transmitted this increase to demand according to the dictates of income elasticity and we noted that the differential effect upon the supply price is determined by the rates at which resources can be substituted at the margin. No one would contend, however, that it has been possible to observe the fine hand of income elasticity at work in agriculture as a result of the big bulge in

[3] From the *Midyear Economic Report*, Table V, page 65.

[4] This figure, however, overstates the real rise in income to the extent that some goods and services are still unavailable in terms of earlier specifications, that public price control is operative as in housing and more important that private rationing, price control and "gray" markets keep the consumer price index below the level that would otherwise prevail.

national income. The demand for farm products, as of 1947, appears to have expanded by leaps and bounds, far more than can be explained by income effects even if one assumes a relatively high income elasticity for farm products. Nor can one observe any appreciable difference between those farm products presumed to have a low and those having a high income elasticity. The reasons for this failure to observe these income effects are, however, fairly obvious. It is the perennial difficulty of identifying and isolating the effect of one force in a situation where other forces are also actively at work.

Two things appear to have occurred: one, the demand for farm products as a whole has apparently expanded far more than was to be expected from the increase in income; and two, farm products with low income elasticity have fared, so it appears, about as well as those with much higher elasticities. In addition to increase in income (always restricted to the United States in this context) the demand for farm products has been lifted by (1) the diversion of some buying power to food caused by the continued short supply of a number of important durables, (2) the low reserves of food, and (3) the extraordinary foreign demand. The latter is especially instructive on the following point: There can be little doubt that wide differences do exist among the income elasticities of farm products. Accordingly, although the sharp rise in income did increase the demand for, say, eggs, meats, milk and fruits, more than that for cereals for example, the pronounced expansion in the foreign demand for cereals has obliterated these differences. Lastly and most important is the fact that the price elasticities of most farm products are on the low side, and in the short run these price elasticities have predominated, reflecting both supply and demand conditions in transition.

The income analysis herein outlined applies essentially to long-run adjustments. There are no reasons for believing that given time for the long-run to manifest itself, the income effects to be expected from general analysis will not occur. As they do it may be presumed that the cost structure in agriculture will be modified by these income effects along lines indicated earlier in this section.

III

Product Price Effects. The prices of non-agricultural products that farmers buy are an important highway connecting the two

sectors of the economy under discussion. We shall restrict our remarks to items entering into production in agriculture. Production expenses of farm operators have doubled, increasing from 6,280 million dollars in 1940 to 12,500 millions in 1946. Our query at this point is: How much of this increase has been caused by the changes that have occurred in employment?

It is well known, of course, that by no means all production expenses of farm operators consist of non-agricultural products. The item for feed purchased is large and it has tripled, jumping from 842 million dollars in 1940 to 2,477 million in 1946. Feed, seed and livestock, all products originating in agriculture, are among the items that have risen most in price. Nor does the bill for taxes, hired labor, mortgage interest and rent belong in the classification of products with which we are concerned here. Among the products coming from the hands of the non-agricultural labor force are such items as farm machinery, building materials, motor and other equipment, insecticide, twine, electricity, fuel, dairy and hardware supplies, and the like. This category of items made up about 45 percent of all production expenses of farm operators in 1940 and about 38 percent in 1946.

The product price effects resulting from basic changes in national employment, such as have occurred since 1940, may be traced in terms of three types of adjustments, namely (1) the level of employment, (2) the level of wages, and (3) the structure of wages and of other rewards to factors. First, then, let us consider briefly an increase in the level of employment under the assumption of a constant level of wages. It is conceivable, albeit very improbable, that the non-agricultural civilian employment could have increased from a little less than 38 millions to virtually 50 millions, as it did in fact from 1940 to midyear of 1947, without any increase in the general level of wages. It is, nevertheless, instructive to speculate on what might happen to costs under such circumstances. Let us suppose for a moment that all non-labor resources in the American economy had been fully employed as of 1940 with diminishing returns to human effort generally, at the margin. The consequences of adding a mass of workers, totalling 12 millions would certainly have lowered the value productivity per worker. With the level of wages constant, and with the cost of production increasing, it follows that the prices of products would have to rise.

Obviously all this is a far cry from the circumstances that have in

fact prevailed. Despite an increase of about 30 percent in non-agricultural civilian employment, the real output per worker presumably has increased substantially. To illustrate, if we return to the figures for labor income given earlier, namely about 49 billions in 1940 and 110 billion dollars for 1946, and adjust for changes in prices,[5] the aggregate increase amounts to nearly 50 percent and, on a per worker basis, to almost 15 percent. The inference is that there existed much excess capacity in terms of resources complementary to labor and accordingly a measure of increasing returns has been realized. We may infer from this, given a constant wage level, that the cost of producing non-agricultural products would have fallen and lower product prices would have been warranted.

The level of wages has been anything but constant. Inflation has been the lubricant, and we have used it freely in mobilizing the economy for war and again in making the transition to peacetime production. We have had enough inflation to overcome a multitude of frictions and also enough to reduce sharply the buying power of all whose money income is inelastic. While it is difficult to ascertain exactly how much the level of wages has risen, taking all non-agricultural industries together, the increase in average hourly earnings in manufacturing will serve our purpose. The 1940 monthly average was $.66 per hour and at midyear, 1947, it had reached $1.22 per hour, a rise of nearly 85 percent.

If we assume that the value productivity per worker increased about 15 percent and if we adjust for the increase in wage rates, the indication is that we have had a wage inflation in the neighborhood of 70 percent, and this increase, and in many cases more than this, is reflected in product prices.

At this point it may be instructive to take a look at the changes in prices paid by farmers. Building materials have doubled since 1940 while at the other extreme, the prices paid for farm machinery (other than motor vehicles) have risen less than 40 percent. This difference in price behavior is not wholly a matter of degrees in administered prices. Take the case of farm machinery: the major firms in that industry have been in a favorable cost position, such as to warrant relatively low selling prices (even though such prices have not equated supply and demand without industry-wide ration-

[5] The consumer's price index for 1946 averaged 139.3, but this plainly understates the price situation. In December of 1946 this index stood at 153.3. In the above calculations we have, essentially for convenience, adjusted by 150.

ing and a respectable dark-gray market). For the most part the efficiency of labor has not been impaired during the transition to peacetime conditions, excess plant capacity has been utilized more fully lowering overhead cost per unit and selling cost have undoubtedly fallen; and as a result, although wages have followed the general upward spiral, selling prices have risen substantially less than in most fields. One leading firm, the International Harvester Company, it is of interest to note in passing, was moved to announce a small reduction in its price list some months ago.

There is little on which to remark in the case of changes in the structure of wages, and of other rewards. Looking at rewards generally, it appears that returns to proprietor interests, with agriculture in the forefront, have risen relatively more than wages and salaries, that wages have exceeded salaries, and that interest and net rent have risen the least.[6]

	1939		1946	
	In Billions of dollars	Share of total in %	In Billions of dollars	Share of total in %
Total	70.8	100.0	165.0	100.0
Employees (wages and salaries)	48.0	67.8	109.8	66.5
Net income of Ag'l proprietors	4.3	6.1	14.9	9.0
Net income of other proprietors including net corporate profits	11.1	15.7	27.3	16.6
Interest and net rent	7.4	10.4	13.0	7.9

What then are the price effects of fundamental changes in employment, such as have occurred in the United States since 1940, upon non-agricultural products that farmers buy? The adding of 12 million workers to civilian employment in non-agricultural jobs probably did not lower the value productivity per worker. Instead, there are many diverse indications that output per head employed has increased somewhat, perhaps as much as 15 percent but very likely not as much as 25 percent or more as some have been prone to argue, and surely not as much as wages have increased. Consequently, higher product prices have been in order to reflect a marked wage inflation, but not necessarily as high as many product prices have soared—in view of the fact that rewards to proprietors now claim a larger share of the national income than formerly. (See data

[6] Based on *Survey of Current Business*, U. S. Dept. of Commerce.

above.) In the main the non-agricultural products that farmers buy for production have not risen disproportionately.

Factor Price Effects. We noted, first, the gentle rain that comes from an expansion of income and how this nurtures factor costs in agriculture. The demands for farm products grow but at an uneven rate and herein lies the clew to their effects on costs. We then observed the stormy path of non-agricultural product prices feeding higher costs into agriculture. This storm consists of two conflicting currents; namely higher productivity making for lower cost and a gusty spiral of wage and price inflation, much the stronger of the two as it sweeps the countryside. There is still a third force at work, probably much the strongest of them all over the years in reshaping the basic cost structure within agriculture, and that is the effects of employment on the relative cost of human effort in agriculture.

The channels and the nature of the causes at work are, I believe, fairly clear. The development of the American economy has made it necessary to transfer, on the one hand, many labor resources out of agriculture, and on the other much capital into farming. To the extent that these transfers have been insufficient a factor disequilibrium has arisen. This imbalance between agriculture and the rest of the economy was worsened very appreciably during the Great Depression. There was the failure of job opportunities to materialize in industry sufficient to absorb the excess supply of labor in agriculture, and there was the extreme instability of prices and income adding to the economic uncertainty of farming and thus tightening the adverse effects of capital rationing upon farming.

Obviously, the financial position of farmers has improved by Bunyan-like strides. Never before were they better situated in terms of assets owned to total assets and in terms of liquidity. Accordingly, we may expect farmers to close a substantial part of the gap that has heretofore existed between the prevailing cost of additional capital and the marginal efficiency of capital used in farming. Yet this gain, important as it is, would be largely blocked unless labor resources in excess of supply in agriculture have an opportunity to transfer into nonagricultural employment.

The expansion in employment has, of course, provided precisely this type of opportunity. The industrial-urban labor market has been absorbing many farm people. But this labor market, even at best, always, has many imperfections. There are an endless variety of barriers to migration. More recently the shortage of housing has loomed very large. Yet despite the barriers—physical, economic,

and social—the improvement in the factor market for labor in the nonagricultural sphere has affected agriculture. The evidence on this point is not controvertible. In January, 1947, the farm population was 3 million less or about 10 percent below that in April, 1940. The careful, detailed, studies of the characteristics of the labor force in agriculture by Hagood and Ducoff throw much needed light on how this factor market operates.

Our concern here, however, is with factor costs in agriculture. On theoretical grounds as well as statistical, our conclusion is as follows: (1) In going from low to high employment the wages for human effort increase relatively more in agriculture than they do in the non-agricultural sector; and (2) the cost of human effort in farming rises relatively to the cost of capital including the cost of land.

Given a change in national employment of the magnitude that has occurred since 1940, we may expect these two types of adjustments in costs to bring about a major transfer of labor resources, out of agriculture, as it has, and to induce a far-reaching recombination of resources in farming consisting of a substitution of capital for human effort, and, on many farms, an increase in the scale of the farm. Two sets of figures will aid us in illustrating these developments. First let us take the change from 1940 to 1946 in average annual earnings per full time employee:[7]

	All Industries (in dollars)	Mining (in dollars)	Federal General Government (dollars)	Transportation (in dollars)	Manufacturing (in dollars)	Wholesale & retail trade (dollars)	Services (in dollars)	Farms (in dollars)
1940	1306	1388	1139	1754	1432	1391	949	390
1946	2357	2677	2424	2937	2512	2392	1842	1181
Increase in dollars	1051	1289	1285	1183	1080	1001	893	791
Increase in percent (1946 over 1940)	80	93	113	67	75	72	94	203

Note first that in this context wages on farms have increased much more relatively than in other major industries. The increase in nonagricultural wages listed range from 67 to 113 percent while those on farms tripled. In absolute terms, however, the increase on

[7] Based on Table 26 of the July, 1947 Supplement to *Survey of Current Business on National Income*. U. S. Department of Commerce.

farms was the smallest, namely, 791 dollars compared to a range from 893 to 1289 dollars in other fields.

The second set of figures pertain to the changes in relative costs of factors within agriculture:

Type of factor	Increase from 1940 to midyear, 1947 1940 = 100
1. Capital (cost of long and short term funds)	100
2. Farm machinery	140
3. Equipment and supplies	150
4. Farm real estate	190
5. Building materials	200
6. Farm labor	320

In closing these reflections on cost, it may be of interest to speculate on what would happen to this pattern of cost if during the next three to five years the United States were able to maintain full employment, and if farm product prices were to decline about one-fourth to one-third relative to other product prices during this period. My anticipation would be in these terms: agriculture would be better supplied with capital than ever before, capital rationing would become a less important factor than before the war, and the effective rate of interest in agriculture would probably not rise. Given the strong financial positions of farmers it might even decline some. Prices of farm machinery, equipment and supplies would climb from present levels, and building material, on the other hand, would fall. The strong upward drift in farm real estate prices would be checked; but under the conditions postulated, it would probably not decline. The cost of labor, and of human effort generally in agriculture would continue to rise for the disequilibrium in this factor market is still very considerable. If these expectations were in fact realized, the cost structure in agriculture will become significantly different from that of the pre-war period, and this, in turn, will require an important reorganization of resources in farming, substituting capital for labor and enlarging the scale of many American farms.

Costs in economics, like gravity in physics in this atomic age, may be a bit old-fashioned, but basic nevertheless, in analyzing economic efficiency. The income and price effects of high employment clearly point to changes in the cost structure in agriculture that are exceedingly far-reaching in their economic, social, and political implications.

COOPERATIVES IN A CAPITALISTIC ECONOMY*

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THE current controversy between leaders of cooperatives and other types of business organization has directed renewed attention to the role of cooperatives in our capitalistic private enterprise economy. To many, cooperation has appealed as a means of solving some of the difficult economic problems which confront our national economy. More enthusiastic exponents of cooperation hope for the day when cooperatives will dominate economic activities. Others look upon the movement as antagonistic to the present economic order and would relegate it to a subordinate role. In view of these differences it is timely to review the basic doctrines and plan of organization of cooperation and of the capitalistic economy in which it operates. Then we may appraise objectively the place of cooperatives in the contemporary economic order.

Let us examine briefly, "What are some of the distinguishing characteristics of our capitalistic private enterprise economy?" Various ideas could be presented but, in general, our economic system is characterized by a predominant use of capital and is differentiated from rival systems of economic organization in its form of ownership and control of capital and in its distinctive motivation.

Among the essential elements in the system are its economic institutions including, among others, the institution of private property. Private property rights in both producers' and consumers' goods are basic features of the capitalistic economy. Over long history we have accepted the doctrine that the property which an individual creates or acquires belongs primarily to him. The right to private property is a means of compensating the individual for activities he has undertaken and is an incentive to the full use of his productive ability.

The profit motive is another generally recognized feature of the system. Economic activity in the capitalistic system is actuated by the quest for private gain. It is upon this motive that the capitalistic economy depends to stimulate individuals to put forth their greatest productive effort.

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

The right of private enterprise is a dominant feature of our economic society. Within limits, individuals are privileged to engage in any enterprise they choose and are free to enter into contracts for the production of goods and services. Production and distribution of goods and services are characteristically organized and performed by private individuals or privately owned organizations. We should note the prime importance accorded to the individual in our economic system. We shall see that in the cooperative plan of organization similar stress is placed on individual initiative and control.

It is in this setting of economic doctrines and economic institutions that American cooperation is being developed. Now let us consider the basic principles and plan of business organization characteristic of cooperation so we may see in what respects cooperatives and ordinary business are in agreement and in what respects there are differences and conflicts.

What Is a Cooperative?

What is a cooperative? A clean cut, comprehensive definition is difficult to formulate. There are various concepts of cooperation but for purposes of this discussion a cooperative may be viewed as a form of business organization—an economic entity[1]—owned and controlled by its member patrons for the rendering of services for their mutual benefit as patrons. A better understanding of what a cooperative really is can be obtained by examining its underlying principles and by comparing its plan of organization and operation with that of ordinary business corporations.

The differences between cooperatives and ordinary business firms appear very distinct at first sight, but these are principally differences in form of organization and operation. When one considers the underlying economic objectives of the cooperative plan of business, they are not fundamentally at variance with the basic objectives and principles underlying ordinary business. Basically, cooperatives seek economic gains for their members and patrons The objective of a farm producers' cooperative is to improve the returns, the gains, to be derived from the individual farm business. The objective of a consumers' cooperative is similar to this.[2] The

[1] Frank Robotka, "A Theory of Cooperation," this JOURNAL, Vol. XXIX, No. 1, February 1947, pp. 94–114.

[2] Dr. James Peter Warbasse, a leading exponent of consumer cooperation, has pointed out that "the workingman patronizing his cooperative store . . . is in profit business, just like the farmer." See James Peter Warbasse, "Basic Principles of Cooperation," *The Annals of the American Academy*, Vol. 191, May 1937, pp. 15–16.

basic aim of every business undertaking regardless of its form is gain for some individual or individuals. A corporation, ordinary or cooperative, is an arrangement for carrying on economic activities. It is not the ultimate receiver of gains or the bearer of losses. These eventually go to or fall on natural persons.

The cooperative plan of business has been shaped accordingly to achieve the objective of its members and patrons. For instance, cooperatives differ from ordinary business in their *method of control.* Voting in a cooperative is usually (not always) on a one-man-one-vote basis regardless of the number of shares the individual member may possess. This is in contrast with the practice in ordinary business corporations in which voting is based on the number of common shares owned. The use of the one-man-one-vote plan of control is a means to the end of promoting the cooperative objective of maximizing returns to the farm business of the individual participants. If voting in a cooperative were on a share basis, it is conceivable that a few might vote to distribute more of the proceeds in returns on shares rather than on the basis of product handled. The cooperative plan of business control is obviously democratic. It emphasizes the importance of the individual and is in accord with the basic tenets of private enterprise.

Cooperatives usually place a *limitation on the return to capital* which is in contrast with the practice of ordinary corporations which establish no such limits. In their incorporation papers cooperatives generally set the upper limits to returns on member capital at 6 or 8 per cent, but more and more are establishing lower limits and follow the practice of paying only the prevailing rate of interest on this capital. Again, this difference in cooperative and ordinary business procedure is attributable to differences in the objectives of the respective organizations. To repeat, a farmer advances capital to his cooperative not for the purpose of improving his return on his cooperative securities, but rather to obtain better returns on his farm products and thereby improving returns to capital invested in his farm. The differences are in methods and the form of operation and are not fundamental since, in the final analysis, both the private business owner and the farmer are seeking in their own way to enhance gains to the individual.

Another basic feature of the cooperative plan of operation is that *services are performed at cost* or on a non-profit basis. In handling the products of their members cooperatives are usually obligated (under contract) to deduct all costs incurred from the total proceeds

and then to remit the remainder to the participants on the basis of the volume of business they have provided. When operated in this manner, the cooperative has no income or gain on its own account. However, when the net proceeds are distributed by the association they give rise to gains or income in the farm business of the respective members. Knowledge of this aspect of the cooperative plan of business is essential to understanding why in determining federal income tax liability patronage refunds are excludable from the tax base of the association but must be included in determining the personal income tax of the participating patrons. The ordinary business firm, in contrast with the cooperative, is operated for the gain of the stockholders or owners. The difference between cooperatives and ordinary business on this point is not as pronounced and fundamental as some assume. The two systems have much in common in that the ultimate aim of both is to achieve gains for individual participants. The difference lies in the way in which the gains are allocated to the individuals involved.

As has been suggested above, another respect in which the cooperative plan of business differs from the ordinary business plan is in its *patronage refund distribution*. In the cooperative any net margins remaining at the end of the fiscal period are distributed or prorated to members on the basis of patronage. In the ordinary corporation, net profits are distributed to stockholders on the basis of shares owned or are retained in surplus. Under the cooperative plan a different distribution of income results, but it is not antagonistic to any basic principle of private enterprise.

When we examine cooperative business for the similarities it bears to ordinary capitalistic enterprise, we find a predominance of likeness. Cooperative business accepts the fundamental institutions of capitalism including the right of private property, the right of contract, inheritance, and the right of private enterprise with its emphasis on the dignity and importance of the individual. Even in the matter of motivation the differences are a matter of form rather than basic principle.

With respect to many aspects of their daily business operations, cooperatives also are like the ordinary enterprise. They use capital to carry on their activities and pay the going rate of interest for it. They hire labor and usually obtain it on the same terms and conditions as other firms. They employ managers and compensate them on the basis of the quality of services they render. Like their

ordinary business counterparts, they depend on efficient business methods for success.

Furthermore, cooperatives and ordinary business firms are in substantial agreement on the place of government in the economic system. Cooperatives are in full accord with the doctrines of private enterprise and generally oppose the encroachment of government in business. While cooperatives have been the object of some favorable legislation including financial and educational aids, the advantages which have been conferred have been resonable and do not appear to exceed benefits extended to other business groups in the public interest.

It has been charged by some that cooperation is socialistic and that extension of the movement is a step toward the creation of a socialistic state. A brief examination of the doctrines of socialism reveals some fundamental differences. Socialism represents ownership and control of the basic means of production and distribution by the state and for the benefit of society as a whole. A feature of socialist doctrine is its emphasis upon a more equitable distribution of income and wealth. Socialism implies subordination of the individual to the state and places the interest of the general public above private interest. It would replace competition as the regulative force in economic society and substitute control by government.

In contrast with the doctrines of socialism, cooperatives generally oppose ownership and control of the means of production by the state. Socialism is at variance with the philosophy of nearly every member of farmers' cooperatives in America, since it is recognized that under this system of economic organization not only factories and railroads but also land would be subject to state ownership and control. Cooperatives also favor an improved distribution of income. However, cooperative distribution according to patronage rests on the principle of productive contribution which is in accord with the principle of distribution commonly accepted in capitalistic society. It is in contrast with the socialist goal of equal distribution or on the basis of need.

In general, cooperatives recognize along with capitalist business that expansion of the business functions of the political state creates an instrument which in the end would destroy cooperatives or would allow them to exist only as an arm of the state and under its control. The experiences of cooperatives in communist Russia and fascist

Spain bear witness to this point. In brief, cooperation seeks to gain its ends by economic action rather than political action.

Thus, after reviewing the basic concepts of capitalism and cooperation, we find a maximum of agreement in their underlying principles and foundations. We may say that cooperatives are an integral part of the capitalistic economy just as are ordinary corporations, partnerships and individual proprietorships. Cooperation is a phase of the capitalistic free enterprise system and not foreign or antagonistic to it. A better understanding of these concepts by both cooperators and ordinary businessmen would serve to lessen the bitter controversies which often develop between these groups and would promote a greater tolerance.

The Role of Cooperatives

Now we may inquire, "What is the place of cooperatives in our capitalistic economy? What positive contribution can these organizations make toward improvement of the economic system?" A A number of answers may be supplied to these questions but, in general, the primary role of cooperatives is to overcome some of the defects and limitations of the capitalistic economy. Important among these are imperfections in the competitive process which interfere with the free allocation of resources in accordance with consumer preferences. A fundamental objective of the cooperative plan of business is to improve competition and to enlarge the area in which the competitive pricing mechanism is effective.

In performing their important role in the economic system, successful cooperatives provide leadership in supplying their patrons with goods and services on a more efficient and economical basis than they have been provided by non-cooperative business. Some have referred to this as the "pacemaker" or "yardstick" role of cooperatives. Let us review by what methods these organizations have achieved these desirable results.

Repeatedly cooperatives have taken the lead in the introduction of *improved techniques* of production and distribution which have served to reduce costs and improve the returns of their members. Among these techniques are standardization of production of various commodities produced on farms and standardization of packages and grades. Quality improvement programs and improved methods of handling often have been sponsored by cooperatives. Efforts to standardize market quotations and terms of sales, and

activities designed to widen market information available to producers have been accomplished where cooperatives have taken the lead. In many cases these and other improvements gradually were adopted by competing firms and thus the benefits also have become available to others than members of cooperatives.

Purchasing and consumers' cooperatives have been in the forefront in the effort to improve qualities of merchandise of all kinds by such techniques as laboratory testing of products, open formulas, descriptive labeling, standardization, and by methods designed to provide patrons with more information about the merchandise they use. These organizations aim to reduce selling costs by substituting informative advertising and consumer education for advertising and salesmanship based largely on emotional appeal. By popularizing these methods, cooperatives enable the economic system to more nearly approximate the conditions of perfect competition.

It must be recognized that cooperative performance often falls short of promise in introducing these desirable techniques. Cooperatives may reexamine to advantage their advertising, their selling, their various marketing and purchasing practices to ascertain if they are playing a positive role in improving the efficiency of the economic system.

By bringing about the horizontal combination of producers, cooperatives have played a distinctive role in achieving important economies. Horizontal combination has been a means of effecting an *optimum scale of enterprise* including optimum scale of plant, optimum scale of management and other services. In this way small-scale farmers who could not perform certain marketing and purchasing activities efficiently on an individual basis have been brought together to obtain the advantages of size. Horizontal combination has been instrumental in reducing irrational competition characterized by excessive duplication of services and facilities in many local and terminal markets. Duplication of creameries, livestock buyers, egg and poultry buyers and other services were frequent and tended to leave the scale of production of various business units far below the optimum level. By entering these situations, cooperatives have contributed significantly in improving the allocation of resources in our economy.

Cooperative groups are at times slow in recognizing that the need for further horizontal combination of producers exists. Changing

techniques in the form of improved transportation and better processing facilities give rise to new optimums in the scale of enterprise which call for the cooperation of more producers. If this is to be achieved in the areas in which many cooperatives operate, consolidation of these groups is necessary. Among our dairy and grain associations in the middlewest, projects of this kind are needed urgently at this time. If these organizations recognize their role in the capitalistic economy, the step should be taken promptly in the best interest of the individual producers.

Cooperatives have achieved other significant economies and improved the economic position of small-scale producers (and small-scale consumers) by *vertical integration*. The need for integration in agriculture both forward toward consumers and back toward sources of supply is large. The typical farm is a small-scale business enterprise, a small food or fibre factory, which is too small to achieve the advantages of vertical integration on an individual basis. Entry of such a unit into additional marketing or purchasing activities requiring specialized equipment and services is not economical since an optimum scale of enterprise could not be achieved. By joining with others in a cooperative organization, the individual farmer can obtain the advantages of integration on an economical basis. Illustrations of the entry of cooperatives into such activities are common. Some dairy marketing associations are performing all of the respective marketing functions including assembly, processing, transportation, and the like, all the way to the consumers. More and more purchasing associations have undertaken wholesale functions, manufacturing, refinery operations, and including ownership of the primary sources of their raw materials.

Among the advantages which cooperatives have obtained for their patrons by vertical integration are economies involved in the elimination of successive advertising expenses, successive selling costs, handling charges and profit margins as commodities are transferred from hand to hand on the way to market. Vertical integration has made more economical distribution possible by making marketing more direct.

Certain private business interests have viewed the trend toward large-scale vertical integration by cooperatives with alarm. It is argued that small cooperatives at the local level are desirable, but not large integrated organizations. It should be pointed out that there is no basic difference in the principle of operation of the two

types of cooperatives. Both operate according to similar plans and have similar objectives. When farmers unite in their cooperatives to obtain the advantages of vertical integration they are extending their business in the same way as large private firms which are integrating their activities forward toward consumers or back to sources of supply.

It is conceivable that vertical integration of producers could approach the monopolistic situation. This involves a completeness of integration from producers to consumers which goes beyond present development of cooperatives. The probability of these organizations achieving such control of our agricultural commodity markets is relatively small as we shall point out later.

Another important role which cooperatives have performed consistently is that of counteracting and breaking down the monopolistic elements which develop in private business. The prevalence of monopolistic pricing is one of the more important reasons why the capitalistic economy fails to function satisfactorily, since the system depends upon prices to direct the activity of individuals into the most productive channels. Cooperatives are a means of effecting some control over monopolistic pricing. By entering into competition with existing monopolies, cooperatives are a factor in making the price structure more nearly competitive in many lines of enterprise. Furthermore, it is a control that operates within the framework of the private enterprise system and it is, therefore, a means of avoiding further extension of controls by government.

From early history cooperatives have taken a stand against monopolistic practices in private business. In the Granger period of the 1870's, cooperatives were formed and directed toward breaking up monopolistic conditions of that period. Contemporary cooperatives likewise have been established with the avowed purpose of providing competition in fields in which protection against monopolistic conditions has been deemed desirable. The entry of cooperatives into the petroleum business, into the manufacture of fertilizers and farm machinery are illustrations of current efforts to provide competitive safeguards against monopolistic elements.

From time to time, some cooperatives have deviated from the traditional stand on monopoly and have resorted to monopolistic methods. Early in the 1920's under the promotional efforts of Aaron Sapiro, an extensive attempt was made to organize cooperatives large enough to control an important part of the supply of certain

agricultural commodities. It was essentially an attempt to effect monopolistic controls to improve farm prices. In the Farm Board days of the early 1930's somewhat similar attempts were made to organize large national cooperatives which were expected to exercise an important influence on the prices of agricultural products. These and other attempts to effect a monopoly position by means of cooperative organization broke down. The basic difficulty that all attempts to achieve a monopoly position in agricultural products have faced is that the cooperative has not had control over the volume of production of its members or of producers outside the organization. Therefore, as soon as returns to farmers were increased by organization, additional supplies were produced which served to undermine the monopoly position.

Some contemporary cooperatives appear to be returning to acceptance of the monopoly principle even though the results under earlier attempts were none too successful. Some of these organizations are seeking to effect rather tight control, approaching monopolistic control, of the market in order to obtain additional returns for their members. To avoid the failures experienced in earlier attempts to achieve a monopoly position, government assistance has been resorted to in some instances to strengthen restrictive practices. State and municipal governments are reinforcing the power of fluid milk organizations in many of our large city markets. Federal marketing agreements, production control, and price support programs are a few among a number of methods which tend to enlarge the power of some cooperatives.

We can understand and sympathize with the point of view of cooperators who desire to use the size and power of their organization to achieve monopoly gains. Admittedly, farmers have suffered serious abuses in some markets in the past. They have cause to be irked by present pressures being exerted on them by both business and labor monopolies. Some undoubtedly have concluded that it is either too slow, or next to impossible, to break down the monopoly position of certain buyers in the market by normal competitive methods, so they have turned to building up their own monopoly power to challenge the opposing forces in the market. The reaction is to meet power with power.

However, the gains which cooperatives may achieve by creating monopolies, some of which are reinforced with government help, may be short-lived and costly both to cooperatives and to farmers.

Such organizations easily may become weak and inefficient. An even more serious matter is that public resentment against such an economic structure is growing and cooperatives as well as farmers face the prospect of reactions. Private business has experienced similar reactions in the past as reflected in SEC legislation and other curbs. Reaction to the monopolistic practices of certain labor groups led to passage of the Taft-Hartley Labor law, the Lea (Petrillo) Act, and other measures.

It should be understood that, to date, those who would use cooperatives to achieve monopoly gains represent a small minority in the movement. It should be understood also that cooperatives have not developed organizations which approach the size and power of many of our large national corporations and labor unions. Some of our largest cooperatives such as Land O'Lakes, Farmers Union Grain Terminal Association, Grange League Federation, and Eastern States Farmers Exchange are relatively small when compared with our leading private corporations. Furthermore, since these organizations do not control supplies in their respective fields and insofar as they do not try to manipulate price by withholding supplies, they are not monopolistic elements in the price structure.

Observing the rapid growth of cooperatives some individuals have expressed the fear that these organizations threaten to supersede other forms of private business. Taken by itself, the growth in the business volume of cooperatives from 1940 to 1945 has been impressive. In this period the total volume of business of farmers' cooperatives in the United States increased from $2.3 billion to $6.1 billion, or 165 per cent.[3] However, in the same period the total cash income of agriculture increased 149 per cent, and the total volume of general business as measured by bank debits to deposit accounts rose 107 percent. Moreover, the business volume of farmers' cooperatives expressed as a percentage of gross consumers' expenditures was only 5.8 percent of the total in 1945.

The preponderant majority of cooperatives over the country recognize that the sound, constructive role of cooperatives in our capitalistic economy is that of competitive pacemaker and not monopolistic manipulation. They are aware of the prime importance of maintaining leadership in efficient production, processing, and distribution. The more progressive cooperatives recognize

[3] Cooperative Research and Service Division, Farm Credit Administration, Washington, D. C.

that it is their function in the economy to stimulate competition by maintaining high standards of efficiency and service. To achieve these results, cooperatives do not need to be large enough to constitute a monopolistic influence on prices. Even a small but efficient cooperative occupying a strategic spot in the market may be highly influential as a competitive pacemaker.

To perform their role in the economy most effectively, cooperatives themselves need the stimulation of private business competition. Successful cooperatives owe a great deal to their competitors. Efficient competitors present a continuous challenge to cooperative management to try to render better service at lower costs. The reciprocal competitive action of efficient cooperatives and efficient private business firms is a most desirable goal for the economy. It is a means of assuring to farmers and others a more effective and productive economic system than one in which government regulation plays a larger part.

Thus, we see that cooperatives provide a means of complementing and strengthening the capitalistic economy at its weakest points. While cooperation is clearly not a panacea for all the ills of capitalism, it does perform a positive role in the free enterprise economy by aiding it to achieve a better allocation of resources, higher total production and a wider distribution of income. The ameliorating influence of cooperatives in our economy is particularly vital in these days when the free enterprise system is being challenged by the sanguine promises of state-controlled economies that now prevail over so much of the world.

THE PLACE OF COOPERATIVES IN A SOUND FARM ECONOMY*

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TO SEE farmer cooperatives in their true perspective one must view them not only as business entities, but also in their relationships to the farms they serve. In 1800 America was a country of small industries and small farms. Today America is a country of large industries and small farms. In 1942, 205 manufacturing corporations owned 49 percent of all the corporate manufacturing assets. Industry has become large through the creation of large production units which are usually combined with large procurement departments and large selling departments. In general the procurement, production, and selling departments are all closely integrated under common management and ownership. In contrast to this, the production unit in agriculture has remained small, typically the family operated farm. In 1940 this typical farm was 187 acres. Such farms are too small for each to have an efficient buying and selling department of its own.

Through the years farmers have sought to overcome this handicap. The most successful device has been the cooperative which permits a group of farmers to join together in the creation of a single buying or selling department to serve the farms of its several members. In this way farmers can combine the advantages of efficient production with efficient procurement and selling. Thus, farmer cooperatives are an integral part of the farms they serve.

Dr. Frank Robotka pointed this out in a paper presented at the American Farm Economic Association's session in Philadelphia in 1946. You will recall that he described the farms of America as autonomous units and the farmer cooperatives as federations of these autonomous units, having delegated powers. He stressed the fact that farmer cooperatives are creatures of the farmers, owned by the farmers, controlled by the farmers and having only such powers as are delegated to them by the farmers. Dr. Robotka went on to explain how under such an arrangement it was logical for farmers to adopt such policies as one-man-one-vote, limited earnings on capital, non-profit operations and the distribution of savings

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

in proportion to patronage. In other words, the farmer cooperative is not just another enterprise competing for the farmers' business. It is a business which the farmers own and control which competes with those which farmers do not own and control. Because the farmer owns and controls his cooperative, the cooperative views the procurement, marketing and service functions from the standpoint of the farmer, and not from that of a third party who merely handles products which he himself neither produces nor uses. In saying this, I am not condemning the merchants who handle supplies and products for the farmers. On the whole, I am sure that they are men of as high integrity and character as are the farmers themselves. I am, however, stressing the difference in viewpoint between the cooperative and the third party businesses which serve the farmer. Both are motivated largely by the desire for economic gain—the farmer from farming and the third party merchant from handling the farmer's goods. The farmer wants efficient and adequate service at low costs, whereas the merchant is largely interested in good margins times large volume.

As is generally known, cooperative marketing has a longer history than cooperative purchasing of farm supplies. The first efforts were related largely to the handling of products as they left the farms, namely assembling, grading, packaging and shipping in car lots. Later farmers turned their attention to central or terminal markets. To be effective in these larger markets, larger volumes were required. To solve this problem farmers did a natural thing—they federated their local cooperatives into a central or regional selling unit, which was owned and controlled by the farmers through their local associations. Even this left untouched the fields of processing and the merchandising of the finished product. More recently farmers have entered these activities by cooperatively owning canning plants, dehydrating plants, freezing plants, oil extracting plants, cotton gins and the like. In the case of farm supplies, farmers first organized local buying clubs or units which competed largely at the retail level. In time the farmers extended their competition into the wholesale and manufacturing functions. This, too, was accomplished largely by the federation of local cooperatives into central units having volume sufficiently large to permit efficient operation.

I have prefaced my discussion of the subject at hand by thus explaining the integrated relationship between the cooperative and

the farms it serves because one must see this clearly in order to understand the place of cooperatives in a sound farm economy. American farm policy has historically promoted the family-operated farm, farmer ownership, efficiency in production, and a minimum of government in farming. Farmer cooperatives contribute towards these objectives. They promote the family farm by enabling small farmers to be efficient not only in production, but in buying and selling and processing and merchandising. They promote farmer ownership by increasing farm income. They promote efficient production by enabling farmers to obtain supplies and services at cost. They help to minimize the direct participation of government in agriculture by enabling farmers to solve problems for themselves.

Let me illustrate the need for cooperatives in a sound farm economy. A few years ago the Commodity Credit Corporation had accumulated large stocks of agricultural products. The CCC had no adequate merchandising program for the surplus it owned—nor is it likely to, in the American economy. Under our so-called free enterprise system, merchandising is considered a function for the private trade including cooperatives, and I think rightly so. Thus we found ourselves in a position of the government owning the surplus, and the merchandisers unable to adequately merchandise stocks which they did not own or control. You know the story of how the surplus was finally liquidated at reduced prices as feed, grain for alcohol, and relief. The point is that our government support programs themselves do not provide the machinery for good merchandising. If farmers are to have a strong voice in marketing and merchandising, they themselves must set the pace by developing facilities which they own and control. The cooperative provides the best technique yet devised for this purpose.

Let us look at another example—potatoes. Last year the government spent about 80 million dollars supporting the price of potatoes. Potato marketing men in whom I have confidence tell me there would have been no actual surplus provided we had an adequate distributive system for getting the proper quality and quantity of potatoes where they were needed when they were needed. Not only did potatoes spoil, but in some areas good quality potatoes rotted or were used for feed while in other areas cull potatoes were used for food.

Contrast potatoes with citrus, where a surplus also existed. In

the case of citrus there was a marketing agreement which supplied the fresh market with high quality fruit and diverted the surplus into juice, canned fruit and other products. Where there are strong cooperatives, as in citrus, the farmers can through their own democratic organizations administer the marketing agreements. Where strong cooperatives do not exist, marketing agreements must be administered largely through government representatives. I believe that a careful study would show that once the government assumes the responsibility for administering marketing agreements, it is extremely difficult for farmers to organize cooperatively. I suggest the need for further study of this phase of marketing agreements so as to make possible maximum farmer direction if and when marketing agreements are extended to other commodities or markets. Similar examples of the need for cooperatives and of what farmers have done through cooperatives can be cited for almost any commodity.

In a number of milk sheds farmers have invested in facilities for handling flush-season milk in the form of butter, cheese, milk powder, condensed milk or ice cream. Fruit growers and vegetable growers have invested in facilities for converting a part of their highly perishable products into non-perishable form. In this way high quality products can be marketed on the fresh market, and the surplus, including the lower quality, diverted to the processed market. Thus the market is steadied, the total amount offered the consumer is increased, the consumer obtains better quality and the farmer receives more income. Farmers, having their own brands, can promote the expansion of their markets. Not only this, but they can conduct or guide research designed to solve specific problems. Moreover, when research has been completed, farmers through their cooperatives can put research results into practice.

Nor need all of the examples of what cooperatives can do in a farm program be chosen from the field of marketing. During the recent hearings of a congressional committee I had occasion to review the Preliminary Report of the Joint Legislative Committee on Dairy Products, Livestock and Poultry, New York State Senate, February 15, 1917. This investigation very vividly brought out the fact that farmers in the New York milk shed were being exploited in the purchase of feed through price fixing and the adulteration of feeds through the use of such substances as chaff, sawdust, and

ground hulls. To correct the situation the farmers of New York organized their own feed manufacturing and distributing agency—namely, the Grange-League-Federation. In a matter of months this new farmer-owned and controlled agency had injected enough new competition into the feed trade to satisfactorily raise the level of quality and service. Not only has this been done in New York, but in most of the states of the Union. Nor has the farmer competition been confined to feed. It has also extended to virtually all items of farm production supplies including seed, fertilizer, tractor fuel, machinery, building supplies, electricity, telephone service, credit, insurance, drainage, irrigation, conservation and artificial insemination. This farmers have done for themselves without resorting to government assistance.

I do not want to leave the impression that cooperatives are a cure-all for the farmer's problems; they are not. Nor do I want to leave the impression that cooperatives are not subject to the pitfalls and ups-and-downs characteristic of all business. Cooperatives are difficult to organize and require the same competent management and direction essential to any business. In addition to the problems confronting other business, cooperatives have such added responsibility as membership records, membership relations, and annual meetings.

The point I want to stress as strongly as possible is that despite all the farm programs yet devised, there is a great need for cooperatives. Through cooperatives farmers can set the pace in improving the quality of farm supplies, reducing the costs of farm supplies, and improving the service connected with the handling of farm supplies including electric power. Through cooperatives farmers can set the pace in improving harvesting methods, improving the grading of farm products, reducing spoilage, improving quality and promoting orderly marketing. Through cooperatives farmers can set the pace in processing their products, directing research, and improving distribution. Through cooperatives farmers can pioneer in finding new uses for their products and expanding their markets both at home and abroad. Through cooperatives farmers can take the initiative in the upgrading of the diets of the American people through a sound program of education in nutrition and food values and thus help remove our surpluses by converting them into better food to build better bodies. No farm program yet devised can offer the farmers as much hope in the future in these fields as

the cooperative. Nor can any farm program place the incentive as directly upon the farmer or decentralize responsibility for decisions and performance as does the cooperative.

In doing these things for themselves it does not follow that farmers will drive from the field those who handle farm supplies and products as third persons provided the latter are equally alert and efficient. I am suggesting no preferential status or privileges for the cooperatives. I think farmers have amply demonstrated that their cooperatives can hold their own when given an equal opportunity.

Following the hectic experience of cooperatives in the Sapiro and Farm Board days many farm leaders, including some agricultural economists, tended to push cooperatives to the background and pin their faith in government administered programs for agriculture. I suggest you check back through the titles of the articles carried by the JOURNAL OF FARM ECONOMICS or the books pertaining to national farm policy and note the lack of emphasis on cooperatives in the past few years. The JOURNAL OF FARM ECONOMICS has gone for as long as 2 years at a stretch without carrying a single article on farmer self-help through cooperatives. Incidentally I was pleased to note that Professor John D. Black included a statement on cooperatives in his article in the August 1947 issue of the JOURNAL. I hope this marks the beginning of a trend. During the past few years numerous books have been written by some of our most noted farm economists covering the scope of farm policy as they saw it, but making no mention whatever of farmer cooperatives. About a year ago I wrote the author of one such book which received national recognition, pointing out the fact that in outlining a national farm program he had made no mention whatever of the need for improving the quality of farm supplies or of improving marketing, processing and distribution of farm products or of what cooperatives can do in that field. He replied saying that that was such a big field in itself that he could not cover it in his book and therefore had omitted the subject entirely. I would have felt more reassured that such was the real reason if in the preface or elsewhere in the book he had made this explanation. I hope I am not unkind when I say that some farm leaders have gotten so engrossed in government programs that they tend to look upon cooperatives as unimportant to a national farm program. Despite this fact, farmer cooperatives have made un-

precedented progress during the past 15 years. I believe that agricultural economists generally will do well to take a fresh look at what farmers can do for themselves through cooperation.

I want to leave with you my conviction that cooperatives have an important place in a sound farm economy. Let me repeat that basically cooperatives are a mechanism of self-help and can do much to provide needed services for farmers. They fill a need not filled by any farm program yet devised. Cooperatives are not a cure-all for the troubles of agriculture but they can make important contributions in improving agricultural conditions.

DISCUSSION*

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The ideas presented by Dr. Koller in his paper, "Cooperatives in a Capitalistic Economy," are sound and tangible. Such observations as I make therefore largely will be for the purpose of directing greater emphasis to some of the ideas he has set forth.

In the vernacular of the college gridiron we would say that Dr. Koller has taken us "back to fundamentals." His consideration of such items as cooperative principles and characteristics, similarities and differences between cooperatives and other private enterprise, and cooperatives as agencies for greater efficiency, reduced cost, and monopolistic control is basic in understanding the role that cooperatives occupy in a capitalistic economy.

At times cooperatives have encountered difficulty because their leaders have not understood sound economic principles, or, in any event, they have flouted them. If cooperatives are to make significant progress, they will need to stick to fundamentals, fundamentals based on established cooperative principles and sound economics.

Cooperatives as a Part of Modern Capitalistic Economy

In an interpretation of a capitalistic economy, it seems important that we stress what may be termed the "modern aspects of capitalism." Examination of the writings of cooperative leaders indicates that too frequently their views on capitalism have been restricted to the concepts of rugged individualism and individual entrepreneurship. While it generally is recognized that the farm enterprise is among the last strongholds of our economy where these concepts have significant application, it should be understood that cooperatives, as business agencies, operate in an arena characterized by highly integrated and giant corporations, enlarging spheres of government intervention, and imperfect competition.

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

This suggests that the economy in which farmer cooperatives find themselves is the outgrowth of an ever-changing evolutionary process. It is an economy in which we witness the impacts of new techniques, the emergence and disappearance of markets, and a shift from simple household crafts to the modern business corporation.

No one will deny that it is important for cooperatives to try to evaluate the position they occupy in our present day economy. While I appreciate the difficulties, I submit, however, that, if we are to establish adequate guideposts for these associations, such guideposts will have little value unless they blaze the trail for adjustment to the kind of capitalistic economy that will evolve in the decades ahead. If economics is to serve most effectively, we have the responsibility of interpreting for cooperatives the direction that our economy of the future will take. In the past the concern of cooperatives at times has been too much that of attempting to keep their economic footing on ground that is slipping away from them; witness the efforts of many livestock shipping associations to maintain their operations about terminal markets at the time that economic forces were contributing to the development of direct marketing. The basic job rather is that of attempting to establish a sound footing for the years ahead.

Cooperatives and the Role of Government

While I share with Dr. Koller the view that cooperatives and other private business enterprises are in substantial agreement as to the place of government in business, I cannot quite share his views as to the amount of intervention desired by these segments of our economy. Business often has asked for some of the most extensive forms of intervention. Cooperatives with their interest in marketing arguments and quotas, in protective tariffs, and, on occasions, in an endemic tendency to seek to monopolize markets are no exception. Indications are that whether or not business agencies—cooperative or non-cooperative—look with favor or scorn on many aspects of government intervention is more a matter of time, place, leadership, and economic weather than of the type of business organization. Cooperatives are in need of a penetrating and objective analysis to determine to what extent they as well as private enterprise are to be found among the "... four horsemen—fixed prices, low turnover, restricted production, and monopoly control," which Thurman Arnold said "rode through our economy from factory to farm." In any event it is a disservice to cooperative endeavor to have some of its spokesmen pass objectives and principles for day to day practices without first examining these practices to make certain that they really conform to stated objectives and principles.

In spite of the long-time interest that cooperatives seem to have in a minimum of government intervention, I venture the prediction that, irrespective of the results of the election in November 1948, the long-time trend is up in the degree of government intervention that will confront cooperatives in the years ahead. To expect farmer cooperatives in their present state of development to assume major responsibility for keeping private business in line is saddling them with more responsibility for "moral regeneration" than they now seem prepared to assume.

Cooperatives as Farmer Agencies

In appraising the role of cooperatives in a capitalistic economy there is reason to believe that more emphasis should be given to the fact that they are in effect agencies of farmers and as such serve primarily as an extension of farming activities. This is but another way of saying, as has been pointed out, that it is through the establishment of cooperatives that farmers can most effectively integrate their business operations. Furthermore, in this integration is found a logical explanation for the capitalistic motives behind the formation of farm cooperatives and the fact that at the same time these agencies are but a means to an end and not an end in themselves. It is by such integration that farmers can establish anti- or, more properly, counter-monopoly instruments. In other words, as our modern economy has moved in the direction of imperfect competition, it is through the establishment of their own market agencies that farmers can hope to make their influence felt—in countering or correcting growing monopolistic tendencies.

It is by this means that farmers can hope to maintain or improve their status as individual capitalists. This idea was well put by the late Dr. Stokdyk when he stated that cooperatives are "a rival and a partner of the American system of free enterprise." This is to say that they are a part of the capitalistic solar system and not an outside comet paying periodic visits which may be disturbing or which come into existence only when the economic weather is especially unpredictable. The issue is: will they contribute to sufficient economic improvement fast enough to head off more drastic action?

With respect to the conclusions advanced by Dr. Koller I would observe: (1) that a stronger case could be advanced to show that modern cooperatives, as they seek to correct the abuses of capitalism by serving as a balance wheel in our economy, in reality have the opportunity for outdoing other private enterprise in maintaining what we have come to think of as a capitalistic economy and, (2) that, while I sympathize with Dr. Koller in his hope that cooperatives will serve as a bulwark in maintaining a free capitalistic economy, it appears to me that it will be necessary for cooperatives to develop greater aggressiveness and resourcefulness if they are to make significant progress in the realization of this goal.

Cooperatives and a Sound Farm Economy

In his paper, "The Place of Cooperatives in a Sound Farm Economy," Mr. Davis has introduced a topic that is in need of further development.

In appraising the role of cooperatives in a sound farm economy I suggest that further attention should be directed to an objective analysis of such broad problems as: (1) the role of cooperatives, legislation, and state ownership as instruments for monopoly control, (2) the place of cooperatives in eliminating wastes from competition, duplication of plant facilities, "irrational" consumption and advertising, and speculation and depressions, and (3) the contributions that cooperatives can make to a sound farm economy by (a) reducing inequalities in wealth and income, (b) establishing reasonable prices, (c) maintaining individual entrepreneurs, (d) minimizing government intervention, and (e) developing an understanding of the

economic aspects of market forces on the part of cooperative members. Furthermore, I submit that cooperatives need to give more attention to the interdependence of various segments in our economy as well as to show increased awareness of the extent to which they may contribute to national welfare.

Incidentally, I should like to direct brief attention to the reference to Irish potatoes made by Mr. Davis. As a representative of a state sharing rather considerably in the 80 million dollars, I would like to say that the efforts of a regional cooperative in attempting to deal with this problem were extensive and the tribulations were many. I submit that until cooperatives show ability to grapple with just such problems we cannot be too critical of government intervention. Neither can we expect cooperatives to go as far in correcting prevailing abuses in our capitalistic economy as enthusiasts would lead to believe is possible.

As we examine the performance of cooperative associations we should recognize that there is no room for complacency. If greater progress is to be made in adjusting cooperative performance to our modern capitalistic economy, it calls for greater viability in operation, increased aggressiveness in establishing services that farmers need and desire, and more resourcefulness in developing the types of agencies best suited to serving farmers.

DISCUSSION*

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Professor Koller has eminently succeeded in establishing the Cooperative as a proper and integrated part of a capitalistic economy. He has drawn a splendid series of parallels between the principles and foundations, the points of view and the motives of Cooperatives, particularly Farmer Cooperatives, and what I shall term proprietary business. This is of particular importance in view of the present tendency of interest antagonistic to Cooperatives to mislead and misinform the public into believing that the Cooperative is an instrument of Socialism, totalitarianism or other form of Un-American sociology. In fact, Dr. Koller has done well to emphasize that the Farm Cooperative is, in fact, a bulwark of defense against stateism.

In the sphere of economics, he has done well to stress their utility as pace-setters—measuring yard sticks—a regulatory process, which I believe to be one of the most important economic purposes they serve.

Again, he has well stated the economic effect of the Cooperative as a curb to monopoly, the while pointing out and stressing the lessons to be learned from past experience that monopoly in cooperative guise defeats the ends sought—that cooperatives need the stimulus of keen competition,

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* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

as does any business enterprise, to effect economical efficient public service.

Finally, he makes an effective case for the utility of the Cooperative as a curb, or safeguard, against extended and unwise participation of Government in Agriculture, by aiding and stimulating farmers to solve their own economic problems.

Mr. Davis, too, in directing his review to the impact of Cooperatives on our agricultural economy has stressed many of the same factors and some others.

He has well stated the results of cooperative research and ingenuity in utilizing what formerly were surplus commodities, destined for waste and destruction; by conversion and processing of surplus perishables into non-perishable form, suitable for marketing in an orderly manner paced to the needs for consumption, thereby at once benefiting both the consumer and the producer, by furnishing new and useful products, and by stabilizing markets by levelling the peaks and valleys of prices which inevitably accompanied the feasts and famine periods with respect to supply. Surely here is an economic development of note.

He too cites the regulatory purpose and effect—the pace setting function of the cooperative, and further cites the conditions reported in the so-called "Raines report of the N. Y. Legislature" as official recognition of the need for a corrective; and the inspiring example of a great farmers cooperative in furnishing that effective regulatory force.

The points stressed thus far in these papers, aside from making a fine case for the cooperative as an appropriate instrument in a capitalistic economy, have stressed primarily the effect of the cooperative in the agricultural economy of the nation. It doubtless is axiomatic that in affecting favorably the economic status of agriculture, the cooperative improves the entire national economy.

I have long been convinced that the prime role which cooperatives can play in improving our farm economy, are those which have been so ably reviewed here—and that is of an effective regulatory force:

To set standards of quality
To give the farmer a voice in naming specifications of supplies and equipment purchased, and grades of products marketed.
To regulate, but not control prices, and curb monopoly through effective competition.

All farmers benefit by these factors, whether members of cooperatives or not.

Actual savings reflected in patronage refunds, of course, represent an added economic advantage to the cooperative patron—though the cooperative justifies its economic existence by the first-named factors, irrespective of the latter.

However, the cooperative effects another important factor in the field of farm economics to which neither of the papers presented referred. By this I mean that the cooperative offers the only patent solution to the problem faced by the individual farmer from time immemorial—the necessity of selling his produce on a wholesale market level, though he had had to buy his production supplies at a retail price level. The cooperative

has effectively reversed, or at least largely corrected this situation in instances where it has been utilized.

I am sure that the gentlemen who have presented these papers make no claims that they have reviewed all of the factors by which the existence of successful farm cooperatives affect our national, or even our agricultural, economy. The mere limitations of time would prevent their doing so, were they to attempt it.

For my part in this discussion, I find I cannot, and do not take issue with either of them with respect to the compelling facts and conclusions which they have stated. Therefore, it may be appropriate for me to briefly review other important factors by which the *full* impact of farmer cooperatives on our national economy may be measured—factors which should have the expert consideration of our able farm economists—that they may be properly weighed, and their effects fairly evaluated, for they have a far reaching effect in economic fields far removed from the farm, and therefore, must meet the test of public understanding and esteem.

The limitations of time allowed for this review will permit my touching only on a couple of the phases not covered by the preceding speakers.

The first of these is the effect of the wider distribution of the avails of agricultural production. Under proprietary ownership the avails are concentrated in the centers of capital and in the hands of investors. The extent of the recirculation of these avails by such owners may differ, and the manner of the recirculation obviously will differ vastly from the application of these same avails when received by the patrons of the farmer cooperative. The latter plows such avails back in the community where he lives. There is more mass spending in the community, for the farmer can and does use such avails to patronize and pay the local merchant, machinery dealer, doctor, dentist and the professional man up and down Main Street for goods and services which he would not otherwise be able to pay for. I do not contend that when these avails are directed solely into the hands of the owners of the capital of the proprietary organization that they then and there become frozen, or do not have any beneficial effect on our general economy through recirculation by spending, but I do contend that there is a vast difference in the effect on our economy in the spending of five-thousand dollars for a mink coat and the spending of the same five-thousand dollars at the grass roots by a multiple number of spenders and for family or production necessities.

I believe here is a challenge to economic research—to evaluate the impact of this fundamental change in the course of circulation of these margins or *profit* on our national economy, and we should evaluate further. granted that even though equivalent amounts of such profits were to be spent either by the investor in the one instance, or the farmer producer in the other—which type of spending accomplishes the greatest benefit to our people as a whole.

The second phase upon which neither of the speakers touched involves a fair evaluation of the impact of cooperatives on unemployment. Let us grant for the sake of this discussion that in the conduct of the cooperative enterprise as compared with that of an individual proprietor the individual

proprietor is deprived of his profit beyond the value of his services. But against this factor able economists should endeavor to weigh these factors:

First, there is no loss of employment. The manager takes the place of the owner, at least in the local business enterprises.

Secondly, other employees are as much needed to cause the business to function as a cooperative as for proprietary enterprises. No one is thrown out of work. I have had the argument advanced to me that the cooperative is supposed to aim toward such efficiency that it can function with a lesser number of employees, and therefore thus deprive some individual of employment. My observations through many years of experience have indicated to me that the proprietary business can and usually is run with the same motives toward efficiency, and in many instances with better achievement that the cooperative. One of the besetting problems of certain cooperatives reflected in the experiences of some is that of nepotism, which is not as prevalent in proprietary enterprises.

This factor of relative employment should be the subject of able economic research, so that its actual effect on our economy—beneficial or otherwise—may be accurately measured, and evaluated.

METHODS OF FINANCING RELATED TO ASSET CHARACTERISTICS OF FARMS*

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THE asset requirements of a business firm, whether in agriculture or in some other field, doubtless condition the financing of that firm. But the asset structure of a firm often is symptomatic also of a still broader group of economic characteristics of that firm that may influence its financing. Characteristics of the asset structure, therefore, can sometimes serve as indices of even more general economic characteristics. Thus, a distinctive type of farm financial organization[1] may be found to be associated with a certain type of farm asset structure, yet the important fact may be that both the asset structure and the financial organization stem from such diverse sources as the nature of the available physical resources, the principal products produced, and the importance of management in farming success.

In the main, the emphasis in this paper is on observable relationships between financial organization and internal economic characteristics of farms in which asset characteristics are used as principal indices of variation in internal economic characteristics. As the analysis is based on published data and survey materials collected for other purposes, only county data are available. The objective is to determine whether variations in broad patterns of financial organization of farms go along in any consistent manner with variations in the asset and other internal economic characteristics of farms. For example, do the asset and other economic characteristics of farms vary in any consistent way with the extent to which agriculture is financially self-contained (financed largely by the operator's own funds)? Do any distinctive characteristics of the agriculture stand out where credit has a very important place in the capital structure of farms? In this brief paper only a few major points can be covered by way of indicating some of the more important general relationships that are found in this kind of an analysis.

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[1] The term "farm financial organization" is used here to cover all financial arrangements under which the farm firm obtains the use of real estate and other assets used in farming. Thus, ownership of all assets by the operator, with no debts, is a type of financial organization that is in sharp contrast to one in which landlords and creditors hold a large part of the equity in the assets used by the farm operator.

It is apparent that only a few of these observable relationships and some of the possible reasons for these relationships can be presented here.

The illustrative data used in this paper are taken from a larger study that is being made jointly by the Bureau of Agricultural Economics and the National Bureau of Economic Research. One phase of this larger study has involved the testing of several hypotheses regarding longer run relationships between financial organization of farms, on the one hand, and asset and other economic characteristics of farms, on the other. Pertinent data for 1940 have been developed from many sources (including some rough estimates for missing items) for each of 108 widely distributed counties. The 108 counties were selected (within the limits set by availability of data) to reflect wide variation in the economic characteristics of agriculture. These county data include estimates of: (1) Value and composition of total physical assets used in agriculture, (2) equities of different investor groups in these assets, (3) average assets per farm, and (4) data reflecting indirectly other economic characteristics of the agriculture not revealed by asset data.

A major part of the task has been to develop these estimates so that they are reasonably comparable by counties. It is possible then to group counties acccording to selected characteristics of the financial organization, or according to selected asset or other economic characteristics of the agriculture, and then to tabulate other pertinent items for each group of counties. From these groups of counties a number of "composite counties" can be constructed which have certain distinctive characteristics from the view point of either the financial organization or the economic characteristics of farms. Observations can then be made to determine what is associated with what. Any conclusions regarding causal relationships, of course, depend on more than mere evidence of association, but persistent associations at least give support to (or raise doubts regarding) certain hypotheses regarding causal relationships.

The emphasis in this paper is mainly on the "what is" aspect of the topic discussed. It is a long step to the question of "what should be," or "what would be under different conditions"; but these questions can hardly be answered with any degree of satisfaction without a fairly clear idea of (1) what relationships between financing and asset characteristics of firms are actually found in agriculture and (2) the reasons for these relationships.

As a convenient summarizing device for the purposes of this paper, three composite counties have been constructed for most of the comparisons. Composite county A in all of the comparisons is high as regards the item used as a basis for the construction of the composite counties; C is low and B is intermediate in this respect.[2] The A county for a particular comparison cannot be constructed directly, however, from the top 36 counties in an array of the entire 108, because the financial organization of farms in 1940 doubtless was greatly influenced also by their previous financial experience, particularly during the 1930's.[3] A rather simple stratification procedure has been used to minimize the separate influence of the financial experience factor in the several comparisons of composite counties in this paper. (1) The 108 counties were arrayed from worst to best financial experience in the thirties, as indicated by the percentage decline in the value of total physical agricultural assets from 1930 to 1940. (2) The array of the 108 counties by capital asset change was broken into four equal groups of 27 counties each. (3) The counties in each of the four 27 county groups were then independently arrayed from high to low according to the particular item to be used to construct the composite counties. (4) The 9 counties at the top of the array for each of the four 27-county groups were then combined into a group of 36 counties from which data for the composite A county were computed.[4] Composite B and C counties were similarly developed from the middle and bottom 9 counties in each 27-county array. As is true with most summarizing devices, some important relationships doubtless are obscured by the use of only three composite counties for each comparison.

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[2] A, B, and C thus are merely convenient designations for high, medium, and low as regards the item used as the basis for the construction of composite counties. The meaning of A, B, and C changes throughout the paper according to the basis on which groups of counties are compared.

[3] The problem that arises here can be illustrated from a tabulation in which estimated operator equities in physical assets are used as the basis for grouping the counties into three groups of 36 counties each. Estimated operator equities in the top 36 counties were 64 percent of total physical assets; in the middle 36 counties they were 49 percent; and in the lowest 36 counties they were 33 percent. But the average reduction in asset values during the thirties was 21 percent in the top 36 counties, 14 percent in the middle 36 counties, and 31 percent in the bottom 36 counties. As the level of operator equities in 1940 doubtless was influenced by their financial experience during the thirties, it is difficult to reach any conclusions from this grouping of counties regarding independent relationships between the level of operator equities and the internal economic characteristics of farms.

[4] For more detailed study, each of the 27 county groups of counties was analyzed separately, but for this brief paper only the combined groups are used.

Because each composite county (A, B, and C) reflects about the same proportion of counties with good and bad financial experience in the 1930's, there is a tendency for the influence of this factor to average out in the comparisons among the three composite counties. This permits comparisons of composite counties in which any longer run relationships between financial organization and internal economic characteristics of farm firms have a better chance to become apparent than would be the case without stratification of the data by capital asset change.

I

The above technique can be used to throw light on a number of relationships. For example, what internal economic characteristics of farms were associated with high, medium, and low equities of farm operators in physical assets used in agriculture in 1940? Operator equities in physical assets in the composite A county constructed for this purpose were 63.1 percent, in B they were 47.5 percent, and in C they were 35.2 percent. The differences in operator equities among the three composite counties thus are great enough to permit testing for associated differences in the asset and other internal economic characteristics of the agriculture of the three counties. Selected items are shown in table 1.

Differences in asset characteristics between composite counties A and C stand out very sharply. In A (with 63 percent operator-equities), physical assets per farm were relatively low, land was a low percentage of total physical assets, cropland was a low percentage of total land in farms, buildings were a high percentage of total physical assets, and farmers' dwellings (1930) also were a high percentage of total real estate value. But the difference between A and C as regards importance of non-real-estate assets (physical) was not marked. As data on non-real-estate assets other than livestock and machinery and equipment are fragmentary, the estimates of total non-real-estate assets are not accurate enough to make small differences in the averages of much significance.

Further information about these three composite counties that is not shown by the above data on asset characteristics is revealed by a tabulation of value of product data in table 1. Less than one-half of gross product throw-off (value of product) in the A county was in the form of sales of crop and livestock as compared with over three-fourths in C. Dairy product sales were much more important in A

TABLE 1. SELECTED INDICATORS OF ASSET AND PRODUCT THROW-OFF CHARACTERISTICS OF FARMS IN THREE COMPOSITE COUNTIES[1] WITH DIFFERENT LEVELS OF OPERATOR EQUITIES IN PHYSICAL ASSETS IN 1940

Selected indicators of asset characteristics[2]	County A (operator equities 63 percent)	County B (operator equities 47.5 percent)	County C (operator equities 35 percent)
1. Average physical assets per farm[3]	$6,565	$8,808	$10,053
2. Percentage of total physical assets represented by land	42.6	53.1	60.6
3. Percentage of total physical assets represented by buildings	31.0	22.0	16.0
4. Percentage of total physical assets represented by non-real-estate assets	26.4	24.9	23.4
5. Percentage of total acreage in cropland	35.6	39.1	45.9
6. Value of farmers' dwellings as a percentage of the value of farm real estate in 1930	24.1	15.7	12.1
Selected indicators of product throw-off characteristics[2]			
1. Percentage of value of product from crop and livestock sales	47.3	65.6	76.1
2. Percentage of value of product from dairy product sales	22.7	10.0	7.1
3. Percentage of value of product from other product sales	9.8	5.5	3.3
4. Percentage of value of product represented by home consumption	20.2	18.9	13.5
5. Average number of days of off-farm work by the operator	49	32	26

[1] The average percentage decline in asset values during the Thirties was approximately the same for all three of the composite counties

[2] Except for average physical assets per farm, each county was given equal weight in the averages. Data on product throw-off are for 1939.

[3] Weighted by number of farms after adjustment to eliminate farms operated by croppers in the southern States.

than in the other two composite counties. Home consumption of farm products was high in A as was also off-farm work by the operator. If total value of product included also earnings of the operator from off-farm work and the imputed value of housing services, the differences between A and C as regards importance of crop and livestock sales probably would be even greater.

Even from the foregoing data, it is possible to suggest certain reasons why capital might be supplied more largely by the farm operator in a county like A than in one like C. A farmer with $3,000, for example, would have had over 45 percent of the amount needed in 1940 to finance an average farm business in A, but such a farmer would have had less than 30 percent of the amount needed in C. On the other hand, agriculture such as that described in A probably is not so attractive as that in C to nonfarmer investors. For one thing, both the asset and product throw-off characteristics of the agriculture in A suggest that variations in return on capital would be dependent more on variations in management and other personal characteristics of the farmer than in C. Income from capital probably is harder to distinguish from labor income in A than in C.

The way the nonoperator portion of the equities (those of creditors and landlords) was distributed in 1940 in the three composite counties also throws some additional light on the reaction of outside investors (creditors and landlords) to the different kinds of agriculture. In the A county the 37 percent of total assets represented by combined creditor and landlord equities was about equally divided between these two groups; in B the 52 percent held by these "outsiders" was distributed between creditors and landlords in a ratio of 42 to 58; and in C the 65 percent held by them was distributed between creditors and landlords in the ratio of about 40 to 60. Both creditor and landlord equities in total assets were higher in C than in A, but the difference in landlord equities between these two composite counties was much the greater. Why the outside capital in A was supplied more largely by creditors than in C, and why the landlord portion was higher in C, presents a number of questions that are considered later when composite counties are constructed to reflect variations in the creditor-landlord equity ratio.

It is not feasible to break down the landlord equities in the three composite counties by types of investors, but reasonably accurate breakdowns can be made of the creditor equities. Because of the substantial margin of error in the estimates of non-real-estate loans

held by lenders other than the four principal institutional lenders, only a rough breakdown by real estate and non-real-estate loans is feasible. However, it appears that real estate loans were about 70 percent of total loans in A as compared with less than 60 percent in B and C Real estate loans, however, were only 18 percent of total value of real estate in A as compared with 21 percent in C. The difference between A and C in this respect was more in the percentage of farms under mortgage than in the ratio of mortgage debt to value of mortgaged farms. Only 41 percent of the farms in A were under mortgage as compared with 47 percent in C.

The real estate loans in these three composite counties can be broken down further by four principal lender groups. The Federal land banks and the Federal Farm Mortgage Corporation held about 43 percent of total farm mortgage debt in A as compared with 52 percent in C. Insurance and mortgage-investment companies also held a substantially lower percentage of the total in A than in C—8 percent as compared with 17 percent. But both banks and the residual lender group, which includes individuals, held higher percentages of the total in A than in C. Thus higher operator equities and greater reliance on local sources of real estate credit appear to go together.

Only the data on non-real-estate loans for the four principal institutional lender groups will bear further analysis. In A, the loans of banks and PCA's were only about 9 percent of total non-real-estate assets, whereas in C they were 18 percent. FSA and emergency crop and feed loans in A were only 3.6 percent of total non-real-estate assets as compared with almost 11 percent in C. In relation to non-real-estate assets, therefore, the non-real-estate loans of both business and emergency credit agencies were low in the composite county with high-operator equities.

The foregoing data represent only a limited number of indices which might conceivably be used to observe relationships between (1) the extent to which agriculture was financed in 1940 by the operator's own capital, and (2) the economic nature of farm firms as reflected mainly in indices of asset and product throw-off characteristics. Yet they indicate that the agriculture that was largely financed with operators' own funds differed in a number of respects from that in which landlords and creditors supplied larger parts of the capital used in farms. As farms were constituted in 1940, the demand for outside capital in A probably was less than in C, and at

the same time in A the supply of outside investment funds probably was restricted by the nature of the agriculture. Nothing in these data, however, indicate to what extent the capital structure in A was shaped by demand factors and to what extent by supply factors in the agricultural capital market. To answer this question would involve much additional data, particularly data on the possibilities of efficient use of capital for farm enlargement if additional outside funds were readily available to finance the agriculture in A. This, however, gets into the field of potential financial organization under different conditions, an important topic that cannot be analyzed with the kind of data used in this study.

II

When another set of composite counties (A, B, and C) are developed from the same 108 counties to show the asset and other characteristics of agriculture that were associated with differences in landlords' equities in farms in 1940, it is found that the A county constructed on this basis is much like the C county in the preceding operator equity tabulations.[5] For this reason, a discussion of these tabulations is omitted in this paper. But when a third set of composite counties with *creditor equities* in physical assets as the basis of the classification are set up, it is difficult to find any very clear differentiation among the A, B, and C counties in asset and product throw-off characteristics. Selected data are shown in table 2. Little difference is found among the three composite counties in such indices as average capital assets per farm, the distribution of assets among land, buildings, and non-real-estate assets, the proportion of total land in farms represented by cropland, or the relation of the value of farmers' dwellings to total value of farm real estate. Nor did the distribution of product throw-off among major categories differ much in A from that in C. The three counties differed, however, as regards the importance of off-farm work. Off-farm work in A (high creditor equities) was definitely less important than in B and C where creditor equities were lower.

The data in table 2 on creditor financing suggest that total creditor equities include too diverse a group of capital contributions for variations in creditor equities to bear any consistent relation *in toto* to variations in the internal economic characteristics of agricul-

[5] In fact, with only a few borderline exceptions the counties used in the A county for operator equities fall in the group used in the C county for landlord equities.

TABLE 2. SELECTED INDICATORS OF ASSET AND PRODUCT THROW-OFF CHARACTERISTICS OF FARMS IN THREE COMPOSITE COUNTIES[1] WITH DIFFERENT LEVELS OF CREDITOR EQUITIES IN PHYSICAL ASSETS IN 1940

Selected indicators of asset characteristics	County A (creditor equities 29.7 percent)	County B (creditor equities 21.8 percent)	County C (creditor equities 16.3 percent)
1. Average physical assets per farm	$8,258	$8,847	$7,683
2. Percentage of total physical assets represented by land	53.5	50.3	52.5
3. Percentage of total physical assets represented by buildings	20.7	24.6	23.8
4. Percentage of total physical assets represented by non-real-estate assets	25.8	25.1	23.7
5. Percentage of total acreage in cropland	41.5	42.2	36.9
6. Value of farmers' dwellings as a percentage of the value of farm real estate in 1930	16.1	16.3	16.7
Selected indicators of product throw-off characteristics			
1. Percentage of total value of product from crop and livestock sales	66.9	61.7	60.7
2. Percentage of total value of product from dairy product sales	10.3	17.1	12.3
3. Percentage of total value of product from other product sales	4.7	6.1	7.7
4. Percentage of value of product represented by home consumption	18.1	15.1	19.3
5. Average number of days of off-farm work by the operator	26	37	43

[1] See footnotes to table 1 for explanation of methods used to summarize the county data.

ture. It is possible that the failure of asset and product throw-off characteristics to vary consistently with variations in the level of creditor equities results in part from the large volume of emergency financing that took place during the thirties. The A county (with high creditor equities) reflects the influence of those counties in which a large volume of emergency loans had accumulated during the thirties. It is worth noting also that in A about 47 precent of the loans were non-real-estate loans whereas these loans accounted for only about 28 percent of total loans in C.

More consistent relationships are found, however, when three additional composite counties are constructed on the basis of high, medium, and low *real estate debt* in relation to *real estate assets*. Comparative data are shown in table 3. In the A county constructed according to this definition, total real estate debt was equal to almost 24 percent of total real estate value. In the B county it was equal to 18 percent, and in the C county it was equal to about 14 percent. Average physical assets per farm in the A county were 147 percent of the averge for C, and the average value of real estate per farm in A was 145 percent of that for C. Farms in A thus averaged larger than in C when measured by physical assets, but the percentage distribution of assets in A among land, buildings, and non-real-estate assets was about the same as in C. Cropland, however, was almost 50 percent of total acreage in A as compared with about 30 percent in C.

Composition of product throw-off differed somewhat between the A and C counties constructed to reflect variations in the importance of real estate debt, but less marked differences are found than in most other tabulations. Off-farm work, however, was definitely less important in A than in C.

It could be argued with some plausibility that the higher than average capital requirements in the composite county with high real estate debt (county A) made it necessary for operators to obtain a larger than average proportion of capital from outside sources than in the county with low real estate debt (county C). But the asset and product throw-off characteristics of farms in the A county were no more favorable to landlord investment than were those in C. In fact, landlord equities were about 30 percent in both the A and C counties. Real estate credit appears to have fitted into the capital supply picture at a place where a greater than average need for outside capital was present but where additional direct

TABLE 3. SELECTED INDICATORS OF ASSET AND PRODUCT THROW-OFF CHARACTERISTICS OF FARMS IN THREE COMPOSITE COUNTIES[1] WITH DIFFERENT PERCENTAGE RATIOS OF REAL ESTATE DEBT TO REAL ESTATE ASSETS IN 1940

Selected indicators of asset characteristics	County A (Real estate debt 23.8 percent of value of farm real estate)	County B (Real estate debt 18.3 percent of value of farm real estate)	County C (Real estate debt 13.7 percent of value of farm real estate)
1. Average physical assets per farm	$10,314	$7,420	$7,025
2. Percentage of total physical assets represented by land	51.0	51.0	54.4
3. Percentage of total physical assets represented by buildings	23.7	24.0	21.3
4. Percentage of total physical assets represented by non-real-estate assets	25.3	25.0	24.3
5. Percentage of total acreage in cropland	49.4	41.6	29.8
6. Value of farmers' dwellings as a percentage of value of farm real estate in 1930	15.9	17.9	15.4
Selected indicators of product throw-off characteristics			
1. Percentage of value of product from crop and livestock sales	66.0	60.1	62.5
2. Percentage of value of product from dairy product sales	15.9	13.3	10.5
3. Percentage of value of product from other product sales	6.1	6.6	5.9
4. Percentage of value of product represented by home consumption	12.0	19.4	21.1
5. Average number of days of off-farm work by the operator	27	36	43

[1] See footnotes to table 1 for methods used to summarize the county data.

investment by landlords did not come in to fill the gap. It is possible that the real estate loan contract with the usual margin of security permitted loan capital to flow to farms that did not provide so attractive outlets for direct investment by nonoperators as are found elsewhere where average capital assets per farm were high.[6]

A further tabulation based on the *relative importance* of creditor and landlord equities is presented in table 4. In the A county in this tabulation, creditor equities were 58 percent and landlord equities 42 percent of the total for these two groups At the other extreme, the creditor equity in the C county was only 33 percent and the landlord equity 67 percent of the total for the two groups. This tabulation permits a comparison of the agriculture in composite counties with markedly different creditor-landlord equity ratios. In these comparisons, however, it should be noted that operator equities were somewhat higher in the A county than in the C county—54 percent in A as compared with 44 percent in C.

The A county in table 4 has a number of points in common with the A county in the operator equity tabulation (table 1). In general the agriculture in the A county would not be expected to require as much outside capital as that in C. Moreover, the asset and product compositions in A are less favorable to direct investment by nonoperators than in C. Creditor equities appear to be more important relative to landlord equities where the added security of a loan contract may be required to get outside capital to flow to farms. In the C county average assets per farm were substantially higher than in A but capital flowed into this county more largely in the form of direct investment by landlords. The above data suggest that the relative importance of credit in the capital structure of agriculture is influenced by the willingness of nonoperators to invest directly in agriculture as well as by the needs of farm operators to control more assets than they can own with their own funds.

III

In the four illustrations presented up to this point, certain characteristics of the financial organization of agriculture have been

[6] There is a suggestion from a more detailed study of the data that real estate debt tended to be low in two extreme types of agriculture. The one was a type in which very little outside capital was used either in the form of real estate loans or renting real estate from landlords. Operators financed this agriculture mainly with their own funds. The other type apparently provided such a good outlet for landlord investment that little real estate credit was used.

TABLE 4. SELECTED INDICATORS OF ASSET AND PRODUCT THROW-OFF CHARACTERISTICS OF FARMS IN THREE COMPOSITE COUNTIES[1] WITH DIFFERENT PERCENTAGE RATIOS OF CREDITOR EQUITIES TO COMBINED CREDITOR AND LANDLORD EQUITIES IN 1940

Selected indicators of asset characteristics	County A (creditor equities 57.7 percent of combined creditor and landlord equities)	County B (creditor equities 44.2 percent of combined creditor and landlord equities)	County C (creditor equities 33.1 percent of combined creditor and landlord equities)
1. Average physical assets per farm	$6,478	$8,158	$10,370
2. Percentage of total physical assets represented by land	43.2	53.9	59.2
3. Percentage of total physical assets represented by buildings	28.0	22.6	18.5
4. Percentage of total physical assets represented by non-real-estate assets	28.8	23.5	22.3
5. Percentage of total acreage in cropland	37.9	45.4	37.3
6. Value of farmers' dwellings as a percentage of total value of farm real estate in 1930	20.8	15.3	13.0
Selected indicators of product throw-off characteristics			
1. Percentage of value of product from crop and livestock sales	51.1	66.0	72.0
2. Percentage of value of product from dairy product sales	21.0	11.6	7.2
3. Percentage of value of product from other product sales	7.2	6.6	4.9
4. Percentage of value of product represented by home consumption	20.7	15.8	15.9
5. Average number of days of off-farm work by the operator	38	34	34

[1] See footnotes to table 1 for the methods used in summarizing the county data.

used as a basis for the development of composite counties, and data on asset and other characteristics of agriculture have then been summarized for these composite counties. Classification of data by certain key characteristics of the agriculture, with financial-organization data summarized, also may be instructive. For example, did the pattern of financial organization of agriculture in a composite county with average physical capital assets per farm of over $15,000 differ appreciably from that in a composite county with average physical capital assets per farm of about $4,000?

In the comparison presented in table 5 composite county A had average physical capital assets per farm of $15,533, county B had $7,256, and county C had $4,000. In county A, over 48 percent of the farms were mortgaged as compared with 37 percent in C, but the ratio of real estate debt to the value of mortgaged farms was highest in B.[7] Total real estate debt was equal to about 20 percent of total real estate value in A as compared with 16 percent in C, and in general the financial structure of agriculture in A was more complex than in C.

Differences in complexity of financial organization between these three counties are reflected in the distribution of equities among farm operators, landlords, and creditors. Operator equities were only 43.5 percent of total physical assets in A (high average assets per farm) as compared with over 52 percent in C (low assets per farm). Landlord equities were highest in A, but total creditor equities were about the same for all three composite counties.

Although this cross-tabulation fails to reveal any marked differences in total creditor equities when composite counties are constructed to reflect wide variations in average physical assets per farm, the composition of the creditor equities in the three counties differed in several respects. The land banks and the Mortgage Corporation held about 45 percent of total real estate debt in A as as compared with 51 percent in C. Insurance and mortgage-investment companies, however, held 19 percent of the total in A as compared with about 6 percent in C. Banks, on the other hand, held only 7.4 percent in A as compared with 12 percent in C. There was less variation in holdings by individuals and miscellaneous lenders than for the other lender groups.

[7] County B was also characterized by a high proportion of product throw-off from dairy, poultry, and poultry-product sales, a type of agriculture in which non-real-estate assets may possibly be financed with real estate credit to a greater extent than elsewhere.

TABLE 5. SELECTED INDICATORS OF FINANCIAL ORGANIZATION OF FARMS IN THREE COMPOSITE COUNTIES WITH WIDE DIFFERENCES IN AVERAGE PHYSICAL ASSETS PER FARM IN 1940[1]

Selected indicators of financial organization	County A (Average physical assets per farm = $15,533)	County B (Average physical assets per farm = $7,256)	County C (Average physical assets per farm = $4,090)
1. Percentage of all farms under mortgage	48.3	43.3	36.9
2. Percentage mortgage debt of the value of mortgaged farms	38.6	42.3	38.9
3. Percentage mortgage debt of the value of all farm real estate	20.4	19.3	16.2
4. Operator equities in physical assets (percent)	43.5	50.0	52.3
5. Landlord equities in physical assets (percent)	33.8	27.6	25.1
6. Creditor equities in physical assets (percent)	22.7	22.6	22.6
7. Percentage of total real estate debt held by all lenders	100.0	100.0	100.0
1) Federal land banks and Federal Farm Mortgage Corporations	44.6	45.1	51.2
2) Insurance and mortgage investment companies	19.1	10.9	6.2
3) Commercial and savings banks	7.4	10.4	12.3
4) Individuals and miscellaneous lenders	28.9	33.6	30.2
8. Percentage non-real-estate loans of four lender groups of non-real-estate assets	17.8	20.3	24.6
1) Banks and production credit associations	14.1	12.5	12.8
2) FSA and emergency crop and feed loans	3.7	7.8	11.8

[1] See footnotes to table 1 for the methods used to summarize the county data.

Whereas it was in A (high capital assets per farm) that real estate debt was highest in relation to real estate value, it was in C(low capital assets per farm) that non-real-estate loans of the four principal institutional lender groups were highest in relation to non-real-estate assets. The percentage for these four non-real-estate lenders in A was 18 as compared with 25 in C. In A, however, FSA and emergency crop and feed loans were equal to only 21 percent of the total for the four groups, whereas in C they were equal to 48 percent of the four-lender-group total.

The relatively constant creditor equity for the three composite counties constructed according to average assets per farm thus is made up of widely different combinations of real estate and non-real-estate loans and of widely different combinations of loans by lender groups. This suggests that even though credit may have about the same quantitative importance in large and small farms, yet the functions performed by credit may be quite different.

It should be noted, however, that composite county A reflects the influence of several kinds of large-farm counties. The only distinctive thing about all of them is that the average amount of physical assets per farm was high. Moreover, in the A county, land was a high percentage of total assets, cropland was a high percentage of total land, crop and livestock sales were a high percentage of total product throw-off, and home consumption of farm products was a low percentage of total product throw-off. The financial structure of the large farm county (measured by assets) described above, therefore, was associated with these other internal economic characteristics of farms as well as with high average physical assets per farm.

Similar comparisons of financial organization can be made when differences between composite counties in the relative importance of crop and livestock sales in total product throw-off are made the basis of comparisons (see table 6). The A county, which was constructed to reflect a high proportion of product throw-off from crop and livestock sales, shows almost 83 percent of total value of product in that form. The B county shows 63 percent and the C county 43 percent. Product sales other than crop and livestock (mainly dairy and poultry) accounted for 7 percent in A, 18 percent in B, and 33 percent in C. By reversing the A and C counties therefore, the three counties in table 6 can be used also to reflect variations in product sales other than crops and livestock.

In the A county a relatively high proportion of farms under mort-

TABLE 6. SELECTED INDICATORS OF FINANCIAL ORGANIZATION OF FARMS IN THREE COMPOSITE COUNTIES WITH WIDE DIFFERENCES IN THE PERCENTAGE OF THE TOTAL PRODUCT THROW-OFF REPRESENTED BY CROP AND LIVESTOCK SALES IN 1940[1]

Selected indicators of financial organization	County A (Crop and livestock sales 82.6 percent of value of product)	County B (Crop and livestock sales 63.1 percent of value of product)	County C (Crop and livestock sales 43.1 percent of value of product)
1. Percentage of all farms under mortgage	45.6	42.6	40.4
2. Percentage mortgage debt of the value of mortgaged farms	36.8	41.6	41.4
3. Percentage mortgage debt of the value of all farm real estate	19.0	18.5	18.3
4. Operator equities in physical assets (percent)	38.1	48.2	59.6
5. Landlord equities in physical assets (percent)	38.6	27.4	20.3
6. Creditor equities in physical assets (percent)	23.3	24.4	20.1
7. Percentage of total real estate debt held by all lenders	100.0	100.0	100.0
1) Federal land banks and Federal Farm Mortgage Corporation	47.3	54.6	38.3
2) Insurance and mortgage investment companies	19.5	10.3	7.6
3) Commercial and savings banks	5.8	9.2	14.2
4) Individuals and miscellaneous lenders	27.4	25.9	39.9
8. Percentage non-real-estate loans of four lender groups of non-real-estate assets	23.4	23.8	15.2
1) Banks and production credit associations	16.9	13.0	9.2
2) FSA and emergency crop and feed loans	6.5	10.8	6.0

[1] See footnotes to table 1 for the methods used to summarize the county data.

gage and relatively low ratio of debt to value of mortgaged farms are found. Greater complexity of financial organization in A is reflected also in the high percentange of total equity in physical assets held by landlords. In A landlords held 39 percent as compared with 20 percent in C. Operator equities were 38 percent in A and 60 percent in C.

The land banks and the Mortgage Corporation held a substantially higher proportion of total mortgage debt in A than in C, but they held the highest percentage of the total in B. Insurance and mortgage-investment companies held 19.5 percent of the total in A and only 7.6 percent in C. Banks held less than 6 percent in A and over 14 percent in C. Individual, and miscellaneous lenders held almost 40 percent in C as compared with only about one-fourth of the total in A and B. The two groups of centralized lenders thus were least important in C where crop and livestock sales were a low percentage of total product throw-off.

The foregoing six tabulations are perhaps sufficient to illustrate some of the relationships that are found when the financial organization of agriculture is related across the board without regard to geography to certain key indices of asset and general economic characteristics of farms. It would be instructive also to present additional composite counties constructed to show variations in asset and other economic characteristics of agriculture that go along with variations in the relative importance of different credit sources. A few general observations based on these tabulations are included in the following section. A full discussion of this material, however, falls outside the space limits of the present paper. Attention is now directed to some of the over-all implications that seem to flow from this kind of analysis.

IV

The larger study from which materials for this paper are drawn was undertaken partly to test certain hypotheses regarding general relationships between financial organization in agriculture and the internal economic characteristics of farms. One of the major hypotheses to be tested was that a careful analysis of the available data would reveal general patterns of financial organization associated with different kinds of farm firms. The available data obviously are not adequate alone for a complete exploration of this general hypothesis, but the results so far are promising.

There is little doubt about the influence that income instability, and particularly long periods of drought and depression, exert on financial organization in agriculture. This can be readily illustrated from further tabulation of the data used in this study. The major problem in this study, however, has been to develop a technique which would permit putting the primary emphasis on possible longer-run relationships of internal economic characteristics of farms to their financial organization. It is believed that some progress has been made toward that more difficult objective, but much remains to be done before anything approaching definitive results can be claimed. Accordingly, the concluding observations set forth here must necessarily be tentative and subject to further checking and modification on the basis of additional research.

As this paper itself is in the nature of a partial summary of an empirical investigation, no attempt is made here to be all-inclusive in these observations. Instead, emphasis is placed upon some of the broader tentative conclusions that seem to be warranted by the data. These are of two kinds: (1) those relating to the specific subject matter investigated, and (2) those relating to the possible significance of the general approach followed in this study for research in agricultural finance.

Special observations from the data developed in this study (including some materials not presented here) may be listed as follows:

(1) High operator equities in agricultural assets appear to be associated with moderate capital requirements per farm and with other asset and product characteristics that do not attract private investment for nonoperators in large volume. One factor that apparently is present where operator equities are high is a kind of agriculture in which assets other than land bulk large in total assets. Another is a type of product throw-off which suggests that variations among farms in return on capital are closely related to skill of management and personal characteristics of the operator. (Capital and labor income are closely related.) Counties with high operator equities are found in widely scattered areas in the sample of 108 counties but most of them have the above general characteristics in common.

(2) Landlords appear to be more important in capital supply in agriculture where total capital requirements per farm are high and where asset and product characteristics make farms more suitable for direct investment by nonoperators without detailed management supervision. A high proportion of assets in land

and a high proportion of product in the form of cash field crops are among the characteristics of agriculture associated with heavy landlord investment. The data also supports to some extent the further hypothesis that landlords may be more willing to take the risks of fluctuating yields and prices in such agriculture than they are to take the risks of poor management (or incur the necessary management supervision expenses) on farms in which management is a crucial factor.

(3) No distinctive pattern of economic characteristics of agriculture appears to have been associated with high total creditor equities in 1940. This probably is due in part to the heterogeneous nature of agricultural credit. But it is clear that the credit found where operator equities are high differs both as to kind and source from that where landlord equities are high.

(4) Real estate credit appears to have been high in relation to total real estate value where total asset requirements were above average but asset and product characteristics were such that landlord investment would not be encouraged. Real estate credit, by the very nature of credit, can flow in where security may not be so satisfactory for direct investment. (Excess collateral can be taken as security.) It is possible also that real estate debt tends to be high also where non-real-estate assets which take on more of the characteristics of permanent working capital assets bulk large—dairy herds, for example.

(5) When total creditor equities are related to total landlord equities, it is found that the creditor-landlord ratios were high in somewhat the same kind of agriculture as that in which operator equities were high. Neither private creditors nor landlords are strongly attracted to such agriculture, but some credit appears to flow in even where landlord investment is negligible. On the other hand, the creditor-landlord ratio was low where the willingness of landlords to supply a large part of the necessary outside capital for real estate ownership helped to restrict the demand for real estate credit.

(6) Particular credit sources, which have been considered only briefly in this paper, appear to react differently to different kinds of agriculture. Real estate loans of insurance companies ran high in relation to total real estate value in much the same kinds of agriculture as that in which landlords were heavy investors. It seems probable that much the same kinds of investment decisions are involved in both cases. Banks as *non-*

real-estate lenders also were more important in such agriculture; but banks as *real estate* lenders were more significant in the same kind of agriculture as that in which the operator equities were high.

(7) Land banks and Mortgage Corporation loans ran higher in relation to total real estate value in agriculture with economic characteristics that were less distinctive than those in which banks and insurance companies specialized. This may reflect in part their heavy refinancing operations in the thirties. The same may be said also with respect to the heterogeneous residual group of lenders which includes individuals. But the characteristics of the agriculture for the former were more like those in which insurance companies specialized and those for the latter more like those in which banks as real estate lenders specialized.

The further observations set forth below pertain more to the implications of the general approach adopted in this study for research in agricultural finance. The following appear worthy of special mention:

(1) From a study of a large number of cross tabulations (only a few of which are presented here), the concept of an agricultural capital market seems to have sufficient validity to be used as a framework within which to conduct certain kinds of research in agricultural finance. Assets per farm and their composition afford clews to both the demand and the supply sides of this capital market. Data on equities in assets as of a given date provide indirect evidence on the supply side of this market.

(2) The concept of an agricultural capital market as a framework for research in agricultural finance may provide also a useful cohesive force to bring research in agricultural credit and certain aspects of research in farm tenure more closely together so that the pooled results will give a better picture of the competing and complementary relationships among the several sources of capital to finance different kinds of agriculture. This concept also finds an important place for farm management research to help build up the capital use and capital demand side of the picture. Similarly, an important place is found for research in levels of rural living, use of income, etc. to help build up the picture of capital accumulation and of demand for consumption capital by rural people.

(3) To find meaningful relationships between the economic characteristics of farms and how agriculture is financed, it is necessary to think in terms of entire farm firms as decision-making units as well as in terms of particular types of assets—real estate, livestock, equipment, etc. The concept of the farm firm (even though in this case it had to be applied to county data) requires, for example, that the entire bundle of assets that make up a farm be considered in relation to the entire group of financial arrangements through which control by the operator over these assets is achieved—ownership by the operator, renting from landlords, and borrowing money from various types of lenders.

(4) Important for any interpretation of variations in capital structure of agriculture is a better understanding both of the economic characteristics of agriculture that give rise to demand for outside capital (capital in addition to that supplied by the operator) and of characteristics that attract (or repel) outside investment from different kinds of landlords and creditors. Asset and product throw-off data shed some light on these questions, although all too little is known about the factors that condition outside investment in agriculture. One of the largest gaps in this information relates to landlords as capital suppliers. Such information as we have must be adapted from data collected mainly through the Census to study farm tenure problems.

(5) Finally, by approaching research in agricultural finance along lines such as have been followed here, it is possible to relate the the results more easily to those obtained from research in business finance. It is possible, for example, that variations in the financial organization of different types of commercial farm businesses bear some relationships to variations in financial organization of different types of small business corporations. Landlord investment in farms, for example, may perform somewhat the same functions as certain kinds of equity financing in small business corporations (perhaps something like preferred stock). Farming in which the residential factor is more important may have something in common, from the standpoint of financing, with urban housing. Research in agricultural finance will be enriched if it is conducted on a basis that permits drawing from a broader field of financial experience than that of agriculture alone.

DISCUSSION

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This paper deserves our commendation. It is concerned with a field of research which has long needed attention, and this discussant wishes to extend to Mr. Horton his encouragement to continue the work which he has so well begun.

This agreement with the author's objective, however, does not mean that I am in full accord with either the statement of these objectives, the method of procedure, or the inferences which he has drawn from the data. It is quite clear that the purpose of the paper has not been stated in such a manner as to be easily understood. This, however, is a defect which can be remedied by preparing a carefully worded statement as to the general nature of the problem of the effect of assets on farm financing. It would be helpful also, even at the cost of space, to present more information on the methods of procedure used in collecting and analyzing the data. Finally, there is the question of logic in the presentation of the data. I was, even after carefully reading, not always aware of the transition from one important segment of the discussion to another. Although the farms A, B and C compared are apparently made up of the same farms, yet these farms are not always tabulated on the basis of the same independent variable. There is, of course, no objection to this procedure, but the reader should be made conscious of this procedure.

The author tends to divert the reader's attention from the main objective by raising early in the discussion the "What should be" with the "What is and the why" aspects of the problem. It is usually quite sufficient if the discussion is confined to "What is and why." The discovery of "What and why" is the principal object of research; the second "What should be" is largely a matter of public policy.

I have another, and much more serious objection to the author's treatment of his subject. He does, as all scientists must, continually refer to the significance of the analysis. It is apparent, however, at least to this discussant, that the significance between the data, say in A County as compared to B and C Counties, is based upon the respective magnitudes of the average or mean of A as compared to B and C for any particular variable. But are such variations significant? I believe not, at least they may *not* be significant. It is only when the variation of the individual items within County A for any particular variable is compared with the variation of the same item between counties that the comparison takes on the aspects of significance. Hence, it would be advisable that the data be subject to the type of statistical analysis which will establish whether or not the comparison between counties is, in fact, significant.

CAPITAL RETURNS FROM SOIL-CONSERVATION PRACTICES*

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IT MAY be assumed that the Program Committee, when assigning the topic for this discussion, was mainly interested in the difficulties inherent in evaluating capital returns from soil-conservation practices, and in the analytical and practical possibilities of dealing with such difficulties. These problems are indeed important and timely. Information about capital returns is needed for inducing farmers to make proper decisions about soil-conservation practices, and for helping governments to design adequate conservation policies, and to justify them before the public.

Economic Meaning of Soil-Conservation Practices

A few words may be said about what is meant by "practices" in the economics of soil conservation.[1] In determining the optimum state of conservation it is theoretically required to consider variations in one individual productive service, all other services being kept constant. It is difficult to fulfill this theoretical requirement in actuality; besides, individual productive services are not, by nature, conserving or depleting. In economic reality, theoretical solutions of the optimum state of conservation can only be approximated. One of the most useful approximations is to think in terms of alternative conservation practices.

A certain soil-conservation practice involves interrelated changes in many productive services in more than one instant; likewise, products may be changed in many instances. For example, the practice of "terracing" involves inputs of man-hours and machine-

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[1] Little need be said here about the economic meaning of conservation in general and of the optimum state of conservation. This meaning has been discussed in several previous articles (S. V. Ciriacy-Wantrup: "Private Enterprise and Conservation," this JOURNAL, Vol. XXIV, No. 1, February 1942. "Taxation and the Conservation of Resources," *Quarterly Journal of Economics*, Vol. LVIII, February 1944. "Resource Conservation and Economic Stability," *Quarterly Journal of Economics*, Vol. LX, May 1946). Conservation and depletion refer to *physical* changes in the time distribution of use rates of individual resources. Conservation does not connote efficiency, or depletion, waste. Both may be wasteful. Waste of resources can mean here only that the net-value stream from utilization is not maximized. Some of the problems encountered in maximization form the topic of the present discussion.

hours for construction, the expenditure of materials for preparing proper outlets, expenses for maintenance and repair over the years, variations in size and layout of fields, changes in methods of cultivating and harvesting, changes in yields, changes in risks, and possibly other changes. Under such conditions the present value of the total additional flow of costs caused by a certain practice is compared with the present value of the total additional flow of revenues.[2] By definition, the difference between these two present values (for short, present net revenues) is identical with the capital returns of the soil-conservation practice under consideration. Capital returns may be positive, negative, or zero. Although no one can determine the optimum state of conservation in this way, save by accident, the modest but practical goal of improving the existing state of conservation can be effectively pursued.

Distribution of Revenue and Cost Flows over Time

Revenue and cost flows usually differ in their time distribution.[3] Revenues usually tend to be further removed toward the future than costs. For example, in dam construction for impounding or stabilizing water run-off, costs are concentrated in the first part of the economic life of the structures. This is because custom or law requires amortization within a certain period of time. Economic life may be much longer than this period, and may entail little expense for maintenance. Revenues, on the other hand, may be small at first but may increase considerably later. Usually it takes some time for vegetation and human use to become adjusted to the new water regime. Under such conditions it is misleading if evaluation of the revenue flow is limited by an arbitrary amortization period. This has happened, for example, in connection with the computation of so-called benefit/cost ratios in the Federal flood-control program and in other public-construction projects. The result is an incorrectly small benefit/cost ratio; this in turn may lead to "padding" of benefits through incorrect evaluation procedures. Some of these will be considered later. The remedy is to evaluate revenue and cost flows over the full economic life of the structures.

[2] Present value is the sum of a flow of positive or negative values extending over instants of time, each value occurring in any one instant (for short, current value) being discounted to the instant in which a planning decision is made.

[3] The problem of measuring differences in time distribution has been discussed in: S. V. Ciriacy-Wantrup. "Taxation and the Conservation of Resources." *Quarterly Journal of Economics*, op. cit.

It may be well to note that the economic life is frequently not given by technological conditions. It is a variable which is determined in maximizing the capital returns of the conservation practice under consideration. For example, use of a dam for storing water can be extended indefinitely by expenditures for maintenance for reducing siltation and for removing silt. Such expenditures, however, may become uneconomical at a certain date as compared with other alternatives, such as building a new dam or taking care of silt further down stream (that is, using the old structure merely as a check dam). Sometimes, however, a maximum economic life is given and is economically relevant in planning.[4] That would be true with a tenant who plans to move to another farm when his lease expires and who does not receive compensation for the unexpired life of a conservation practice. For him, the optimum economic life of a conservation practice could not be longer than the duration of his lease.

Allocation and Incidence of Revenue and Cost Flows

The last example leads to another important problem in evaluating capital returns from soil-conservation practices. It may be termed the problem of allocation. Under a given system of values (to be discussed presently) it may be regarded as axiomatic for social accounting that all revenues and costs must be allocated to the soil-conservation practice which gives rise to them, regardless of incidence among members of a social group.[5] It is well to differentiate clearly between such an allocation of revenues and costs to functionally related soil-conservation practices as a problem of proper social accounting, and allocation to persons (incidence) as a problem of income distribution.

Revenues and costs regardless of incidence will be called here social revenues and costs. They are partly private and partly public. The incidence of private revenues and costs is partly on the planning agent responsible for the soil-conservation practice; this portion may be called entrepreneurial revenues and costs. The incidence of a second portion of private revenues and costs is on individuals who are connected in non-entrepreneurial capacity with the enterprise under discussion—for example, as landlords,

[4] Economically relevant means that the given maximum life is smaller than the optimum economic life.

[5] For example, the Federal Flood Control Act of June 22, 1936 (Public No. 738, 74th Congress) employs the phrase "to whomsoever they may accrue."

creditors, or laborers.[6] The incidence of a third portion of private revenues and costs is on individuals under conditions where inter-enterprise connections exist; such connections may occur in soil conservation through the movement of water and debris downhill, of fire and gullies uphill, and through spreading of insects and pests. The incidence of public revenues and costs may be on public property—for example roads and reservoirs. Or it may be so diffused through the body politic that it cannot be ascertained individually—for example, if effects on economic stability, social security, and national defense are involved. The former may be called fiscal and the latter collective revenues and costs.

The importance of incidence of revenue and cost flows for private evaluation of capital returns from soil-conservation practices is great. Such returns may be quite different from the standpoints of the farm operator, his landlord, and his creditor. Similar differences between returns occur if there are such inter-enterprise connections as were just mentioned. The results are differences in the degree and kind of soil-conservation practices which private individuals can afford on one hand, and which are socially desirable on the other. This situation is one of the major reasons for public conservation policy.

In public evaluation, all portions of social revenues and costs from soil-conservation practices are of equal importance. But for the implementation and the technique of conservation policy, differentiation between different portions of social revenues and costs according to incidence is relevant. For example, in order to induce proper (in the sense of allocation as if for social accounting) consideration of entrepreneurial revenues and costs, education may be sufficient; or public assistance to overcome institutional imperfections in the adaptability of management, capital, labor, and land may be desirable. Proper consideration of private non-entrepreneurial revenues and costs can frequently be induced through more vigorous application and improvement of existing tenure and property laws. For proper consideration of public revenues and costs, subsidies or outright public ownership and

[6] The interest of landlords and creditors in conservation is generally recognized. However, labor's stake in conservation is frequently not smaller. Labor is not perfectly mobile. Conservation may affect security of employment (stranded workers in forest areas not under sustained yield management are an example) or conditions of housing (where housing is temporary because of resource depletion as in some mining areas) or personal health and comfort (through dust storms, water pollution, and decay of scenic resources).

management are usually necessary. This is especially true of collective revenues and costs.

The public interest is sometimes defined in such a way as to exclude the entrepreneurial interest. The public interest is said not to be involved if entrepreneurial revenues and costs form a substantial part of social revenues and costs. This is true for many soil-conservation practices on private land. According to this view, such soil-conservation practices should not be subsidized. One may ask, when is the public interest involved? If one, ten, or twenty per cent of social revenues or costs are non-entrepreneurial? If one, ten, or twenty people are involved in addition to the planning agent? Highly arbitrary procedures must be adopted to get out of this difficulty. The W.P.A., for example, adopted a general administrative rule to the effect that at least twenty people should share in the benefits of a public project before it could be approved.

The solution of this difficulty has already been implied. Under our assumption with respect to a given system of values, the public interest is equally involved in all portions of social revenues and costs. However, the techniques of safeguarding the public interest may vary with respect to different portions and, within portions, with respect to causes of improper allocation. The mere fact that social revenues and costs are *also* largely entrepreneurial, does not rule out a public interest in soil-conservation practices on private land. On the other hand, subsidies may not be at all socially desirable even if a substantial part of social revenues and costs are non-entrepreneurial.

If public subsidies for soil-conservation practices are to be given on private land in cases where most revenues and costs are entrepreneurial, the following two criteria may be applied: First, we must ask, are subsidies the most economical tool for improving the state of conservation (considering, of course, costs of administration)? Or are alternative tools—for example, in the fields of education, taxation, and regulation—more economical? Second, assuming that subsidies are the most economical tool, are the resulting social net revenues greater than if the same amount of public money was spent in alternative fields? The economist is not absolved from thinking about these criteria by the fact that rules concerning them are sometimes established by precedent or law.

In the economics of conservation, values are often classified as onsite and offsite, as direct and indirect, as temporary and perma-

nent, and as objective and subjective. These and other value classes are constructed in order to prescribe priorities in evaluation when computing benefit/cost ratios from public projects. The classes themselves are not clearly defined. Furthermore, in the criteria of classification, the problem of incidence is mixed up with the problem of comprehensiveness of revenue and cost flows—that is, with the existence of extra-market (often called "intangible") values. Let us turn now to this latter problem.

Comprehensiveness of Revenue and Cost Flows

Thus far we have assumed that values or value schedules for all units of components (individual services and products occurring in each instant) of revenue and cost flows and for the time discount rate are readily available. It is common knowledge that this assumption is frequently not justified in a value system based mainly on market prices. In other words, effects of a given soil-conservation practice may be recognized as economically relevant from a private or public viewpoint, but expression in terms of money value is difficult. This problem is analytically and practically different from that of allocation. There are, however, important interrelations between the two problems: It is more difficult to appropriate revenues or to shift costs if market values are readily available, than if individuals affected and the courts encounter difficulties in evaluation. Furthermore, in this and other occidental countries, social institutions regulating the allocation of revenues and costs between persons have developed with and around an individualistic market economy. Hence, they are not well adapted to a consideration of extra-market values—especially if the incidence of the latter is collective.

Only in public policy does comprehensiveness of revenue and cost flows create difficulties in evaluating capital returns from soil-conservation practices. It is important also in private economics; but no difficulties in evaluation arise. Individual planning agents are able to compare subjectively at the margin, utilities and disutilities connected with extra-market as well as market goods. Subjective evaluation of extra-market revenue and cost flows and, under certain conditions,[7] of individual time-discount rates, are significant for public policy in understanding and influencing a

[7] With respect to these conditions see S. V. Ciriacy-Wantrup," Private Enterprise and Conservation." *op. cit.*

prevailing state of conservation. But for objective evaluation of capital returns such subjective values are neither accessible nor relevant.[8] Procedures relevant for objective evaluation of extra-market goods in public policy may be called administrative evaluation.[9]

One may differentiate two levels of administrative evaluation on the basis of the quantitative refinement which is attempted. At the first level, it is attempted to obtain money expressions for units or for aggregates of extra-market goods. In computing capital returns from soil-conservation practices, the results may be treated in the same way as market values. At the second level, without attempting a quantitative monetary expression, a certain flow of extra-market revenues is ranked higher than possible cost flows. In this case computation of capital returns from soil-conservation practices is meaningless. The economic issue is selecting those soil-conservation practices which yield the revenue flow with the least possible costs.

The second level of administrative evaluation is most common, if a minimum goal or standard is significant for public policy. Such standards are used, for example, in decisions concerning the amount of internal security, public health, and public safety (against fire and accidents) that is supplied. These standards may vary over time. Minimum standards of soil conservation appear also socially justified and practically feasible. Consideration of such standards is interesting and important, but it does not fit into a discussion of capital returns.

On the first—the quantitative—level, administrative evaluation can often use market values as starting points and bench marks. Courts, public utility commissions, and the like, operate frequently

[8] One could speak for each individual of "subjective capital returns" from soil-conservation practices. However, such a terminology would be confusing and unrealistic. Through observation and interrogation it can be established that planning agents take account of their preferences with respect to extra-market goods, and that they arrive at definite results with respect to the desirability of alternative soil-conservation practices. However, no useful purpose is served by terming these results "capital returns." In public policy, on the other hand, it is necessary to obtain some objective yardstick for comparing extra-market revenues and costs.

[9] The term collective evaluation, which occurs in the same connection (H. D. Dickinson, *Economics of Socialism*. Oxford University Press, Oxford, 1939, 262 p.) is not employed here because market evaluation is in a sense also collective, and because the same term used above in conjunction with revenues and costs might lead to confusion. The term administrative price, in the sense of a price resulting from administrative evaluation, has no relation to the term administered price, which has been used to describe the rigidity of prices under impure competition.

on this basis. In soil conservation, many extra-market revenues and costs can be evaluated in this way. For example, reduction of the siltation of reservoirs, of the pollution of streams, and of the impairment of scenic and aesthetic resources can be evaluated to a large extent by using market values in auxiliary calculations. The particular kind of auxiliary calculation that is employed varies greatly with different problems. Discussion of the many kinds that have been used would lead us too far afield here.

Instead of using market values in auxiliary calculations, market criteria—namely, equality of supply and demand—may be used for administrative evaluation on the first level. Students of socialist economics have given considerable attention to evaluation through trial and error. This type of administrative evaluation is well-suited for individual but not for collective extra-market goods. Individual extra-market goods can be consumed individually and in small portions. Examples are enjoyment of public parks and sport fields.

The same type of administrative evaluation may be used for individual goods that are, at present, evaluated in the market but under market forms which do not lead to equilibrium (such as oligopoly and bilateral monopoly) or under market forms which, although leading to equilibrium, are socially undesirable (such as unilateral monopoly and monopolistic competition). This point deserves mentioning here because the latter condition applies sometimes to the market for capital funds and to the determination of interest rates. There is no reason why administrative evaluation on the first level could not be applied to interest rates. Here also, existing market rates may be used as bench marks; or else equilibrium criteria—for example, stable prices or full employment—may be chosen.

Evaluation of Collective Extra-Market Goods

There remains usually a residual item in types of administrative evaluation which lean on market values and market criteria. This value residual consists of those revenue and cost flows the incidence of which is collective. Possibilities of evaluating collective extra-market goods can only be sketched here. The essential problem is to obtain a demand schedule, that is, a marginal social revenue schedule. A supply schedule, that is, a marginal social cost schedule, can usually be computed from market values; if not, the principles of obtaining supply schedules are the same as for demand

schedules. How then can demand schedules for collective extra-market goods be obtained?

Individuals of a sample or of a social group as a whole may be asked how much money they are willing to pay for successive additional quantities of a collective extra-market good. The choices offered relate to quantities consumed by all members of a social group. If the group interrogated is a sample, and only one sample is used, the modal schedule of the sample is obtained, and each point on this schedule is then multiplied by the number of individuals in the whole social group being investigated.[10] If every individual of the whole social group is interrogated, all individual values (not quantities) are added.[11] The results correspond to a market-demand schedule. For purposes of public policy this schedule may be regarded as a marginal social-revenue schedule. In combination with a corresponding cost schedule the socially desirable supply of the collective extra-market good can be determined.

Several possible objections to this evaluation procedure may be considered:

First, one may object that quantities of collective extra-market goods are characterized by lumpiness, and that marginal schedules, therefore, cannot be obtained. The problem of lumpiness is in no way peculiar to collective extra-market goods. It was already suggested that in practical approximations to the theoretical optimum, total additional rather than marginal values and quantities are used. It cannot be denied, on the other hand, that defining quantities of collective extra-market goods is difficult—regardless of their lumpiness. If no suitable physical quantities can be found, costs may serve; for example, one may measure additional conservation in terms of congressional appropriations for this purpose. In this case it must be assumed that decisions with respect to priorities in the conservation effort are left to the proper administrative authorities. Still, the meaning of such appropriations in terms of physical quantities must be explained to the voters in order to enable them to make meaningful choices.

Second, one may object that expectations of the incidence of

[10] Selection of a sample or samples and of a modal schedule within each sample raises a number of interesting statistical problems which cannot be discussed here.

[11] In the case of individual (in contrast to collective) extra-market goods the quantity scale of individual demand schedules relates to individual units of the good. In order to obtain the total demand schedule (marginal social revenue schedule) quantities are added. In the case discussed in the text, values are added.

costs in the form of taxes will bias the responses to interrogation. Through proper education and proper design of questionnaires or interviews it would seem possible to keep this potential bias small. Guarding against such a bias is a necessity common to all census questionnaires which bear on income.

Third, one may object that marginal social-revenue schedules obtained in the way suggested cannot be used, since other extra-market goods are not considered, and since marginal utility of money is not likely to remain constant. These objections apply also to the use of demand schedules in analyzing the market. Strictly speaking, of course, *all* market and extra-market goods are interrelated because of complementarity or competitiveness in use or production, and because of limited money income. Theoretically one can obtain, through interrogation, marginal social-revenue functions for any number of variables; changes in marginal utility of money can also be measured and accounted for. In economic reality, public policy must usually be content to deal with one extra-market good at a time, and to assume that changes in the marginal utility of money are of the second order of smalls.

Finally, the proposed method of evaluating marginal social-revenue schedules of collective extra-market goods may be rejected as too academic. It is true, of course, that the supply of collective extra-market goods is frequently not determined by monetary evaluation, but by the command of an autocrat, the desires of a powerful minority, or by other institutional and political factors. This does not mean, however, that in a democracy, evaluation might not aid in helping the government to make decisions. It may be noted that the procedure outlined can be used to aid on both levels of administrative evaluation. Interrogation and voting can be used for quantitative determination as well as for ranking of values. Considerable progress has been made recently in designing and evaluating group interrogations by questionnaire and interview. Economists, so far, have made little use of this progress in the field of individual and social psychology. Welfare economics could be put on a more realistic foundation if a closer cooperation between economics and certain young branches of applied psychology could be established.

An Incorrect Procedure of Taking Extra-Market Values in Account

Sometimes a procedure is used in administrative evaluation which is also based on interrogation of individuals but which is

misleading. Such use has occurred, for example, in the literature on socially permissible expenditures of public funds for flood control. Individuals are asked, not how much money they would be willing to pay for successive additional quantities of a collective extra-market good (these quantities, as we know, relate to the social group as a whole), but rather, to report so-called subjective values of individual benefits, for example, of protection against flood damage to a particular enterprise. These amounts are then added. The result is a great but fictitious increase of benefits from public works. Aggregates of subjective values do not constitute a demand schedule for a collective good. This procedure misses entirely the meaning of evaluation and its role in social accounting. The more appropriate procedures which were suggested above may be discredited because of superficial similarities.

Weighting of Individual Preferences

A system of objective values implies that individual preferences are given a certain weight in influencing values. If monetary values are considered, as in the preceding discussion, the weighting is accomplished by the distribution of money income. In administrative evaluation the influence of individuals upon values may also be weighted by their political rights.

The normative aspects of social weighting cannot be approached with the tools of economics. The social significance of individuals and of their preferences depends on the whole culture of which economics is only a part. In economics, however, a particular system of weighting may be selected for study. Likewise, for purposes of public policy a certain system of weighting may be postulated as the "best" on philosophical, ethical, or other *a priori* grounds. Although conservation policy is not concerned with a particular system of weighting, some consequences that result from selecting a certain system are relevant here.

Let us assume, for example, that weights based on equality of economic opportunity and on equality of political rights are selected or postulated.[12] This type of equality is the professed ideal of contemporary democratic societies. This is also the postulate suggested by the philosophic attitude known as positivism. If any metaphysical absolutism of values and of truth is rejected, as in positivism, there is no basis for differentiating between the social

[12] It scarcely needs to be mentioned that equality of economic opportunity does not necessarily mean equality of money income. Neither does equality of political rights mean equal rights of voting for all. Even the most liberal democracies exclude certain age classes from voting.

significance of individuals. In terms of this assumption, then, any deviation from economic and political equality in the above sense would result in distortions of the value system and, therefore, of capital returns from soil-conservation practices. In other words, even if revenue and cost flows were comprehensive—which they are not, as we know—the validity of capital returns as a guiding principle for conservation policy would still be a restricted one. It may even be argued that it should be an objective of conservation policy to compensate for the effects of the distortions of capital returns upon the state of conservation. What these effects are and, consequently, what compensating action is required does not belong in this discussion. It is merely mentioned to indicate a possibility of bias if conservation policy is based on capital returns.

Problems in Obtaining Basic Data

Thus far, we have considered the difficulties in evaluating capital returns from soil-conservation practices. Let us now focus on some problems encountered in obtaining basic data which might be used in appraising capital returns.

In the technology of soil conservation, a wealth of experimental data has accumulated concerning the physical inputs and outputs of soil-conservation practices under different conditions of climate, slope, soil, and vegetation. The approach used in these experiments is the same as in our present discussion, namely, in terms of individual soil-conservation practices. Experiments have not been confined to the laboratory and test plots. They have comprised whole fields and farms. Although some of them have not been well designed and controlled in a scientific sense, a sufficient part of them stand up well under critical scrutiny. Most experiments were undertaken by technologists of the agricultural experiment stations and the Soil Conservation Service.

One might expect that this valuable material would have been used as the basis for an economic appraisal of soil-conservation practices. Both the economist and the technologist would have profited from cooperating in such an appraisal. However, with a few exceptions, economists have chosen a different approach; this is true especially for the Economic Research Division of the Soil Conservation Service.

The economists have attempted to appraise capital returns from soil conservation by comparing net revenues of whole farms which

were completely reorganized for purposes of conservation, with the net revenues of farms which were not so reorganized. Reorganization is referred to as a "complete conservation plan," and comprises usually a great number of changes in individual practices. Some of these changes may result in conservation, others may not. Little attention is given to the number and the character—whether conserving, depleting, or neutral—of individual practices.

Three modifications of this approach are in use. First, net revenues are compared on the same farm before and after reorganization. Second, net revenues of farms reorganized are compared with those of different farms without reorganization. Third, net revenues are derived from farm budgets in which the effects of reorganization are taken into account hypothetically. Accordingly, it has become customary to differentiate between conservation farms on one side, and non-conservation farms on the other. Sometimes a complicated system of scoring is used to put farms into these two classes and to differentiate between degrees of conservation. What is the analytical and practical significance of this approach?

It is sound farm-management doctrine that all farm operations are interrelated. The main reason is the importance of joint costs in agriculture; this problem has been discussed in detail elsewhere.[13] It follows from this doctrine that every change in practices must be traced carefully in its effects through the whole farm. It does not follow, however, that more than one change of practices should be considered at the same time. On the contrary, every effort should be made to keep other practices as far as possible constant in tracing the effects of a change in one practice. This is especially true if a change in one practice alone involves changes in many productive services and leads to rather complex changes of revenue and cost flows. It was emphasized above that such complexities usually arise in the case of soil-conservation practices. The approach under discussion multiplies the difficulties of tracing the effects of soil-conservation practices—difficulties which in any event are appreciable. In addition, the approach may have rather misleading results. This happens if conservation practices change simultaneously with practices which are neutral with respect to conservation—or even depleting. Under such conditions, the profitability of a "complete conservation plan" may be due to other than conservation prac-

[13] S. V. Ciriacy-Wantrup, "Economics of Joint Costs in Agriculture." This JOURNAL, Vol. 23, No. 4, November 1941, pp. 771–818.

tices. Conversely, profitable conservation practices may be discarded because they are appraised in association with other unprofitable ones.

The foregoing disregard of the "other things being equal" requirement is more objectionable than some other difficulties of the approach under discussion. Different periods of time, different farms, different managers, different physical and economic conditions, personal judgment of the investigator in scoring conservation and in constructing budgets are involved in the comparisons between conservation farms and non-conservation farms. In practice, changes of variables connected with these latter factors cannot be avoided and must be, as far as possible, taken into account and corrected for. On the other hand, deliberate simultaneous changes in more than one practice introduce unnecessary complications and dangerous bias.

At best, the effects of a "complete conservation plan" upon net revenues from conservation farms as compared with those from non-conservation farms proves that improvements of farm organization are profitable. This, of course, cannot be denied. But of what analytical and practical use is such a result? Does it tell a farmer which soil-conservation practice out of a number of alternatives, would be profitable for his particular farm? Does it tell him how intensively he should use a certain soil-conservation practice? Does it give him information about profitable modifications of a certain practice under different conditions of climate, slope, soil, and vegetation? Are policy-makers provided with a basis for appraising the flow of social revenues and costs from soil conservation? Do operators, landlords, and creditors become aware of how different soil-conservation practices affect their different interests in a particular farm? I believe that all these questions must be answered in the negative.

Is Soil Conservation Identical with Good Farm Management?

Those who use an appraisal approach in which soil conservation is identified with improvements of farm organization believe, no doubt, that they act in the interest of agricultural education. Still, in the long-run such an identification appears unfortunate because it will discredit conservation. It is possibly true that under most conditions some soil-conservation practices are good farm management. But it is equally true that under most conditions other soil-

conservation practices are bad farm management. Farmers are good observers and will draw their own conclusions regardless of educational efforts.

Since its beginning in the last quarter of the nineteenth century, conservation frequently has been identified with ideas and objectives not necessarily in harmony with it. At one time it was "breaking of monopoly power over resources," at another time it was "eliminating wastes of competition in resource utilization." Before the last war certain crops were stigmatized as soil depleting, and penalties (as deductions from AAA-benefit payments) imposed for their cultivation. Until 1941 corn grown for silage, sugar beets, grain sorghums, peanuts, potatoes, truck and vegetable crops, field beans, peas, soybeans harvested for seed, flax and summer fallow, among others, were officially classified as soil depleting.[14] Some of these crops are valuable for soil conservation under certain conditions because they may serve as a basis for the livestock economy and encourage diversification, or because they may be helpful in eradicating weeds through row cultivation and shading effects, or because they may increase water absorption through their need for deep plowing, or because they can be fertilized heavily without danger of lodging. The conclusion seems warranted that other objectives than conservation—for example, maintenance of parity prices—were responsible for the identification of conservation with a reduction in the acreage of these crops.[15] Could it be that some objective not necessarily in the interest of conservation is behind the recent identification of conservation and good farm management?

What is the farmer to think of these changing identifications of conservation? Some of the best farmers have become rather cynical about the official use of the word conservation. More and more they have learned to regard conservation as a different term for a general subsidy to agriculture, or merely as a device to obtain something for nothing from the government. This attitude is quite understandable if one looks at the official terminology in the past. Will this attitude change if farmers are now told that soil conservation is merely good farm management?

[14] See U. S. Agricultural Adjustment Administration: 1941 Agricultural Conservation Program Bulletin. Washington, Govt. Print. Off., 1941, pp. 33–35 ACP—1941.

[15] After Pearl Harbor, little was said officially about soil-depleting crops, and many of these same crops were subsidized.

Education, as we understand it, means broadening the basis of independent judgment of those who are to be educated. Measured by this yardstick, the economic work of the Soil Conservation Service has not been on the same level as its work in the technology of soil conservation and its application through Soil Conservation Districts. Those who educate are often influenced by what they teach. In this way research is affected too. Economic research sponsored by the Soil Conservation Service has been deflected from a painstaking economic interpretation and analysis of available technological data, and has been directed into an attempt to prove that soil conservation *per se* is profitable to farmers. This criticism must not be misunderstood: It should not be concluded that economic research in conservation might be curtailed. On the contrary, we believe that at the present time greater investment in economic research is the paramount need in the field of conservation.

DISCUSSION*

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Mr. Wantrup defines capital returns from soil conservation practices as the difference between the present value of the total additional flow of revenues and the total additional flow of costs. Capital returns are identical with present net revenue of a given conservation practice. The revenue and cost flows include both market and extra-market values, and the incidence of these may be private or public. Social revenues and costs are defined to include both private and public revenues and costs. It is pointed out that in evaluating capital returns the full economic life of practices should be used rather than an arbitrary amortization period. The economic life, when not limited by technological conditions, "is a variable which is determined in maximizing the capital returns" (or present net revenue) of the conservation practice. The discount rate thus is an important factor in determining economic life.

The section dealing with allocation and incidence of revenue or cost flows points out that while social revenues and costs are also largely entrepreneurial, the public continues to have an interest in soil-conservation practices on private land. The first part of my discussion deals with this point.

The primary reasons for public interest in soil-conservation practices on private land arise because (1) soil resources have a greater economic life for the public than for the private individual, and (2) there may be a desire or a necessity of maximizing efficiency in agricultural production of the

* A discussion presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

country. A reason frequently given for governmental agricultural conservation programs is that the nation must make plans for perpetuity while the individual farmer makes plans only for the period which he plans to operate the farm. Both the government and the individual, theoretically, would make plans for a given farm which would maximize present net revenue, considering both market and extra-market values. Public extra-market values, including those that are collective, usually would be much greater than private extra-market values, and would be an important factor contributing to a greater economic life for the public than for the individual farmer. Over the past decade farms in the U. S. have changed hands on the average about every 20 years. Where an entrepreneur anticipates controlling a farm for a long period of years, maximization of capital returns (present net revenue) generally would require undertaking a conservation program including permanent structures or alterations in the farm. Where such a program is adopted, private capital returns probably would approach social capital returns from the practices, any difference being largely due to difference in the discount rate. However, the economic horizon of the entrepreneur may be limited due to uncertainty, or lack of knowledge or tenure conditions; and the financial position of the entrepreneur may preclude undertaking certain conservation practices, particularly in the early stage of entrepreneurship. As the time period for which plans are made is reduced conservation practices involving permanent structures or alterations in farm organization tend to be eliminated by the entrepreneur and the gap is widened between private and social capital returns. Various methods, such as education, subsidies, and regulation can be utilized to induce adoption of conservation practices and narrow the gap. Selection of measures, however, should be based upon the two criteria outlined by Mr. Wantrup, namely, (1) determination of which measure is most economical, and (2) equalization of social net revenues from alternative expenditures of public money.

The second reason given above for public interest in soil conservation on private land, namely, to facilitate maximizing efficiency of agricultural production of the country, has been of much less importance in the U. S. than in some other countries. It is generally recognized that many conservation practices serve to increase current production as well as to extend the productive life of the factor of production. Terracing, for example, increases current production in most instances and also serves to reduce erosion, thus preserving the land for continued production. For over 50 years England has required by statute compensation of tenants for unexhausted improvements and landlords for damage due to negligence on the part of the tenant. Compensation of tenants for unexhausted improvements and landlords for damage due to negligence by the tenant serves to extend the economic horizon, and thus facilitate the adoption of durable conservation practices, increased production, and maximization of capital returns.

When a country has a shortage of agricultural products, public interest in production on private land increases. Even where actual shortages do not prevail it may be in the public interest to foster conservation practices

on private land if by so doing agricultural production is made more efficient, and product prices therefore are reduced. Both situations give rise to additional extra-market values which are relevant in maximization of capital returns.

The second point in my discussion concerns analysis of results of given conservation practices. Considered from the point of view of practicality, Mr. Wantrup's criticism of methods of economic analysis employed to indicate results of soil conservation practices is only partly justified. Discussion of this point should not be construed as justification of the course economists have followed, but it may be beneficial to point out some of the practical difficulties involved.

It is agreed that in order to ascertain the results of a given practice the "other things being equal" requirement, as set out in the paper, must be respected. It is also generally recognized that farm enterprises, operations and practices are intricately interrelated. Moreover, as is pointed out in the paper, economists and technologists would have profited from cooperating in a rigorous economic appraisal of soil conservation practices. But the development of the "complete conservation plan" is based to a considerable extent upon the type of analysis Mr. Wantrup sets up as essential.

The "complete conservation plan," worked out by the soil conservation service in cooperation with the farmer, is based upon experimental data, modified according to conditions on the particular farm under consideration. Experimental data are obtained from the soil conservation research stations, of which there are about 33 in the United States, and from other sources such as experiment stations. The research stations, located in the various type of farming areas, are conducted to provide information on the results of individual practices in accordance with the "other things being equal" requirement. These data, coupled with other applicable experimental data, form the backbone of the "complete conservation plan."

It is true that all too little formal economic analysis has been made of the quantitative data obtained at the research stations, and if such analysis were made, personnel concerned with making the "complete conservation plan" for individual farms might be able to give economic considerations more adequate attention.

However, economic analysis based upon research station quantitative data would have shortcomings in application to farm conditions. On the revenue side research station data probably would be sufficiently complete so economic analysis would encounter relatively little difficulty, provided market values were applied directly to additional products produced. If an attempt was made to extend the analysis through livestock enterprises, considerable difficulty would be encountered, but by using auxiliary quantitative data a rough approximation of the additional revenue flow probably could be established. The cost side of the analysis would usually have but little quantitative basis in research station data, however. Quantitative cost data that are available at the stations for most practices would have little applicability to actual farm conditions, and, therefore, any estimate of cost flows would have to be based primarily upon auxiliary data. Thus, while revenue and cost flows for individual conservation practice probably could be developed by supplementing research station data,

they would be no more than a rough approximation to revenue and cost flows on actual farms and therefore would be of limited value.

The suggestion might be made to collect farm record data which would provide a basis for reliable economic analysis of capital returns from conservation practices. It is practically impossible and usually impractical under regular farming conditions to attempt identification of quantitative revenue and cost items with individual practices. Furthermore, even if complete and accurate quantitative data were available, most of our economic analytical techniques are not sufficiently precise to measure results of practices which intricately affect the whole farm business. Moreover, conservation practices frequently are characterized by lumpiness, and even though but one practice is adopted on a farm, in many cases it is practically impossible to satisfy the "all other things being equal" requirement. Thus it becomes evident that while merits of economic analysis based upon the complete conservation plan are limited, other approaches are beset by genuine obstacles. That does not mean, of course, that new and more refined research methods should not be developed. Economists, in particular, could be more aggressive in analysis of conservation practices, and, as is pointed out in the concluding sentences of the paper, greater investment in economic research is a prime requirement in the field of soil conservation.

The third and final point in my discussion concerns the relationship of soil conservation and good farm management. It is generally agreed that, as Mr. Wantrup points out, some soil conservation practices are good farm management while others are bad farm management. In comparison of the two terms much depends upon definitions used. Farm management, of course, generally is attributed a broader meaning than soil-conservation, since it embraces other considerations, such as livestock enterprises, as well as land management. Provided the time element used in maximation of returns for both is identical, good private land management and soil conservation would be about the same in many cases. The time element involved in soil conservation, however, frequently is longer than that involved in private land management, and in such cases end objectives are different.

It also should be noted that shifting emphasis in the meaning of conservation and in classification of crops relative to conservation, referred to in the paper, is generally applicable, not to activities of the Soil Conservation Service in connection with its research stations or its Districts, but to programs carried out by the Production and Marketing Administration and formerly by the Agricultural Adjustment Administration. Mr. Wantrup's point is well taken, that such shifting emphasis is not conducive to successful continuation of government induced conservation in American agriculture.

DISCUSSION

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At the very outset let me commend Dr. Wantrup for his very stimulating paper and the previous papers and articles he has contributed to our

Association and JOURNAL. In the brief time at my disposal I concentrate on only a few points.

I want first to call attention to one of the early statements in the paper. I think it deserves special emphasis as a background for thinking about various aspects of our topic—"Capital Returns from Soil-Conservation Practices." He said, and I quote: "Information about capital returns is needed for inducing farmers to make proper decisions about soil-conservation practices, and for helping governments to design adequate conservation policies and to justify them before the public."

In this you see that Dr. Wantrup recognizes two levels of interest. One is the individual farm level and the other is the group, or governmental, level. This distinction is quite significant, and I feel that the paper would be more effective if this distinction had been kept more in evidence. Most of my comments relate to the individual farm level.

At one point Dr. Wantrup discussed the period over which costs are incurred and revenues received and the benefit/cost ratio. He said: "The remedy is to evaluate revenue and cost flows over the full economic life of the structures." He then went on to recognize that this was not always feasible. It seems he might have added a specific acknowledgement that the effective economic life of a given structure, on a given farm, may be different to one interested party than to another.

To illustrate, let us assume there is a farm on which terraces are needed. If we further assume that the farm is owned and operated by a conscientious young man, there is reason to believe that he would attempt to think in terms of the full economic life of the structure as Dr. Wantrup uses the term. This might be 25 years or more.

Now let us make just one change in our assumption and suppose that the farmer, instead of being young, is old. In the case of the farm operated by the young man, a lender might feel free to think in terms of a full economic life of as many years as the farmer himself, despite the chance of a change in operators. However, in the case of the older operator there is the virtual certainty that the management will change and the lender often is unwilling to think in terms of a full economic life of the structure of as many years as in the other illustration. In this connection, the more general a given conservation practice is in an area, the less likely is a change in the management of the farm to alter the practice. In other words, the range within which the separate appraisals of the "full economic life of the structure" falls is more likely to be narrow where a given practice has become institutionalized than when it is being pioneered.

If the owner operator is to borrow to finance a conservation practice, or I would prefer to think in terms of the entire package of conservation practices that are deemed appropriate for his farm, he probably would insist on a repayment plan so that the debt would be serviced out of increases in revenues over what they otherwise would have been. He is equally interested in repaying the loan before the economic life of his composite conservation plan expires.

Lenders too often expect repayment before the processes being financed have fully developed. Nature, however, has never learned how to read the

due date on a note. Consequently, if the repayment schedule of a conservation loan fails to conform to the biological processes being financed, most farmers must seek a renewal, default, or use money from elsewhere in the farm business to meet his contractual obligation.

I, for one, do not consider that the soundest basis for either loaning or borrowing. Nor, as I have pointed out, is it sound for a lender merely to look at the maximum life of an individual conservation practice, or, for that matter of a composite conservation plan for a farm as it appears to the operator, and then to spread his repayment schedule over the full period and hope to goodness that nothing will nullify the effectiveness of the program.

From an area standpoint, the situation is different in at least one important respect. This arises out of the element of size. For example, in an area covering a group of counties, an entire state, or the nation, there is a large enough number of operating units so that statisticians can learn to estimate within practical limits the annual rate of deterioration on farms where deterioration is occurring.

At one point Dr. Wantrup asks a number of penetrating questions. He directs them especially at analyses based on the effects of a complete conservation plan upon net revenues of such farms. He raises such questions as—Does it tell a farmer which soil conservation practice out of a number of alternatives, would be profitable for his particular farm? Does it tell him how intensively he should use a certain soil conservation practice? He concludes his questions by stating the belief that they must all be answered in the negative. With that I would agree; and yet I would ask whether or not any research that already is in progress or might be undertaken could produce entirely adequate answers to these questions. It is one thing to use such questions as a limit against which one can note change. It is quite a different thing to think that research can supply entirely satisfactory affirmative answers to such questions when they apply to specific individual farms.

In the paper considerable point was made of the need to hold all but one thing constant at a time. Although I will grant the soundness of such a policy, I would point out that it is quite hard to justify studying some individual practices in complete isolation. While such a procedure often is satisfactory, there are times when I believe more could be learned from studying patterns than from studying individual practices. Let us again look at terracing for an example. Dr. Wantrup would have us consider terracing as one practice, the development of grass run-off areas as another, and contour plowing as a third practice. As a matter of fact it would seem that as much or more could be learned by studying these three practices as a pattern instead of studying each in isolation.

Toward the end of Dr. Wantrup's paper he expresses concern over the kind of bed fellows "conservation" keeps. For example, he refers to the identification of conservation with a reduction in the acreage of certain "surplus" crops. This is followed with the question: "Could it be that some objective not necessarily in the interest of conservation objectives is behind the recent identification of conservation and good farm management?"

"What is the farmer to think of these changing identifications of conservation? Quite a few good farmers have become rather cynical about conservation. More and more they have learned to regard conservation as a different term for an agricultural subsidy . . . "

While I have no intention of being unduly critical, I must admit that I fail to find what seems to me to be an adequate justification for such statements. From the standpoint that we are discussing *conservation*, need we concern ourselves with what use some action program, or programs, make of the word "conservation"? I am surprised at the statement that "quite a few good farmers have become rather cynical about conservation" because of such identifications. I would agree with him, if he were intending to say that quite a few good farmers wish that various government agencies would at least be consistent in their use of the term conservation, but I am unaware that any significant number are cynical about "conservation" as such.

In closing my part of the discussion let me second what Dr. Wantrup said about the need for more economic research in the field of soil conservation. While I wouldn't go quite as far as he and say that "economic research is the paramount need in the field of conservation," I would say that I believe it to be an important need. Working as I do with lending institutions and with professional agricultural workers and farmers, I am very much aware of the need for more *action* in the field of soil conservation. I would hazard a guess that much more action could be made to rest on our present knowledge and most of it would be well directed. However, it is undoubtedly true that more attention given to economic research should pay good dividends, both in the rate, with which soil conservation practices are being adopted, and in the effectiveness of such efforts.

Finally, let me say that I am sure I speak for all of us when I say I found Dr. Wantrup's paper both stimulating and helpful. While I have dwelt mainly on a few points on which I would appraise the situation a little differently, or at least more fully than did Dr. Wantrup, I passed over far more points on which I find that we are apparently in complete agreement.

THE ROLE OF THE FARM ORGANIZATION ECONOMIST IN THE FORMULATION OF FARM ORGANIZATION POLICY*

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POLICY formulation accounts for about 90 percent of whatever glamour there may be in a farm organization economists job but for only about 10 percent of his opportunities. Policy making also is a controversial aspect of farm organization activity. For these reasons, almost anyone besides a farm organization economist could probably handle this topic with better perspective. There are many government, college, and industry economists well enough acquainted with our problems to do the subject full justice. Nevertheless, it may be of interest to look at this question through the eyes of a practicing farm organization economist.

Why Farm Organizations Employ Economists

The staffs of farm organizations are established mainly to execute the policies of the organization. Agricultural economists are employed mainly because the skills developed through their training and experience render them particularly useful in carrying out the measures dictated by established policies. Farm organization leaders do ask for basic agricultural economic data for policy-making purposes, but the tonnage of data marshalled as a basis for action in fulfillment of established policies heavily outweighs the quantity of data going into pre-decision study. In my own position a substantial amount of activity also is in economics service to member associations, and this bears but little relation to the formulation of Federation policy.

So much for the duties that do *not* bear on policy making. Now for a look at the policy making process, where the organization economists stands in it, and what if anything should be done about increasing his importance.

About Farm Organization Policy

The policies of the farm organizations are the expressions of the majority view of the farmers and farm leaders who constitute

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their membership. The major issues have been dealt with for a generation or more by existing farm organizations, and the core of existing policy is not apt to be altered lightly. Farm organizations are motivated by many valuations apart from the general maximization of goods and services, and the economist's contribution to policy sometimes may be greatly modified. The channels, the mechanisms, through which policy evolves are often diffused throughout the organization, and the farm economist's contact with policy formulation may be slight, even up to late stages.

Sight should not be lost of the fact that farm organizations are democratic institutions. Control and the power to determine policies rests in the members. Too much independence of action with respect to policy making on the part of the employees of the organization smacks of usurpation of authority.

These considerations are the framework within which the farm organization economist plays his role in policy for nulation.

It is difficult to set realistic limits to the functions entering into policy formulation in farm organizations. Surely the kind and amount of information supplied to leaders and members influence the results that follow from the more formal steps in policy formulation, but such influence is quite indirect. More tangible lines can be drawn running to the end result—policy—from certain activities of the legislative and executive bodies of the farm organizations.

The legislative decisions occur in the annual meetings and in intervening meetings of directors, executive committees, and specially authorized committees. A certain amount of staff work is done by the regular employees of the farm organizations in advance of such meetings in order to define the issues upon which new policy must be formulated or existing policy modified.

Then, policy statments enacted by the policy-making bodies are seldom so detailed that they may be applied directly to all problems which they are intended to cover. The result is that the regular employees of the organizations must exercise a degree of responsibility in interpreting formal policy statements.

The Economist's Contacts with the Policy-Making Process

The farm organization economist may enter into all stages of the process described above. In the first instance he can look ahead and see developing economic problems. He can appraise the adequacy of his organization's existing policies for guiding action with respect

to such problems. He can then recommend matters for inclusion in meeting agendas. Such recommendations may include topics for discussion, and suggestions for special committee work, advance studies, outside advice, and other recommendations.

The relative freedom of initiative of the economist to make such recommendations, and the level to which he may carry them varies from organization to organization. It depends upon the policy of the organization, the ability and experience of the economist, and the trust of the leadership in his studies and conclusions.

All the farm organizations from time to time request their economists to prepare policy studies for consideration by responsible organization bodies. The economist may prepare these studies independently, or he may serve as chairman of study groups. He generally reports his results to and discusses them with the policy-making body.

When policy decisions are being reached or reduced to formal statements the economist may be useful. His talents are called on in about this order: (1) ability to grasp the ideas of others and express them accurately in written language, (2) ability to analyze the economic implications of proposed policies, and (3) ability to analyze economic problems and devise appropriate policies for solving them. Wide variations occur in the extent to which the economist is asked or offered the opportunity to present his views on policy at this stage. Debating resolutions is primarily a policy function, and is outside the role of organization employees.

The organization economist's last contact with organization policy comes with its application to day-to-day problems. Interpretation of policy is not solely the function of administration. An administration which attempted to redirect organization policy under the guise of interpretation would soon lose the confidence of its directing heads. Furthermore, it is customary to confirm interpretations more or less regularly by referring them to executive committees, directors, or memberships. Within those limits, however, policy grows in the day-to-day administration.

The contribution to organization policy at this stage is apt to lie at the extensive margin, rather than at the intensive margin of organization activity. To illustrate, the intensive margin of the National Cooperative Milk Producers Federation legislative activity would be represented by bills on tariffs, oleomargarine, cooperatives and dairy product price supports, on which the Federation has

deeply rooted traditional policies. The extensive margin would lie among the two or three thousand bills introduced in each session of Congress, which someone must array in order of their relevance to Federation policy. The increasing complexity of this legislation tends to draw the Federation into new fields of activity. If the economist's analysis of a bill leads to new Federation action, then by so much has the economist influenced the living policy of the organization.

Economics and Policy

If farm organization staffs included no economists, there would still be economic decisions implicit in organization policies. There might be decisions based on very good economics reflecting the economic insight of organization leaders or borrowings from outside economists. On the other hand, these decisions might be based on assumptions that a formally trained economist might consider crude or false. However, without or with staff consultation on the economic content of policy, its economic content is frequently compromised with considerations of social, political (not including party politics) or group interest. The quotation "Man does not live by bread alone" serves other fields than theology.

Economic policy, presumed to deal with maximization of goods and services for mankind in general, may come in conflict with other group objectives. For example, you are familiar with frequent instances during the past fifteen years when proposed methods of raising or maintaining the economic status of agriculture ran head on into farm organization's concepts of the democratic values that should be protected.

Whether these conflicts between possible economic and noneconomic policies for farm organizations all are necessary or not is a question which ought to be inquired into. Possibly some of the existing economic doctrines can be adapted to fit the idiosyncrasies of existing farm organization policy. (Admittedly, this is no new idea. The principal question is whether the job will be done by economists or by someone else.) Possibly, a proper combination of genius and perspiration might produce new economic solutions tending to minimize conflicts.

Economists who are not employed directly by farm organizations can adhere to an ivory tower tradition, remaining as aloof as possible from the aberrations of the economic man and the evanescent necessities of political expediency. Let someone else worry about

the conflicts. Whether or not pure economics is the only sound long-time basis for farm organization policy, the ivory tower tradition has an indispensable place. However, that tradition is a luxury which the farm organization economist can indulge in only sparingly. The major part of the farm organization economist's job is to conduct, or assist in conducting a refitting process. The fulltime theorists perform a service by assembling their laws, axioms and propositions into tentative agricultural or national economic policies. They must expect, however, that the policy products of their assembly lines will undergo considerable refitting at the hands of farm organization members and leaders before they are trotted out to meet the assaults of assorted groups from the other side of the tracks.

The Economist's Contributions to Policy Now

Short of full time, high level policy synthesis, there still remains a great deal for the organization economist to contribute to policy. It is a contribution merely to assemble facts and make them available to policy makers who might otherwise do without them. It is a contribution to analyze facts and draw conclusions upon request. It is a privilege and a contribution to spar with alert farm organizations leaders over policy questions. One of the rewards of this work is the occasional opportunity of sharpening one's or another's thoughts in socratic dialogue.

All these help in shaping policy. Do they make the organization economist important in that role? Probably not more important than the University economist, who can more often catch the farm organization member and leader at home with his sleeves rolled up.

The pinnacle of the economist's effect on policy might come when he is given carte blanche to study a problem and recommend a solution. Such an assignment creates a problem for anyone possessing some knowledge of what might or might not be palatable to the leaders if the palatable answer is shortsighted or economically unsound. The best solution may not be acceptable. The organization economist then should be able to devise a compromise. If there can be professional ethics for economists, it calls for the economist in this instance to properly flag his proposed compromise. My own experience is that a straightforward report of what one feels to be right will cause no difficulty and may sometimes, surprisingly, be accepted. In that case, has the economist influenced the formulation of policy?

A few years ago, the Federation was struggling with its parity policy. I gave the data showing that as between present parity, the Pace bill and the Thomas bill, dairy product parities would be more favorable relative to feed prices by the latter. The Federation endorsed the Thomas parity proposal. For a long time the thought bothered me that I had not dwelt sufficiently on the defects of all three. The subsequent attempts to reconcile differences with the Farm Bureau may have led to a much better all-around understanding of the parity problem than might have come about if the sounder moving average base had been adopted by the Milk Producers Federation from the start. Perhaps it's just as well if farm organizations don't ask for very much policy as such from their economists.

How Economics Can Serve Policy Best—The Farm Organizations Job

How can farm organizations make the maximum use of economists in the formulation of policy? First, by making policy *study* a more important part of organization procedure. Make it a continuous procedure, with definite responsibilities on committees or other units. Second, by securing competent economists, with well-known "passion for anonymity" to service those committees *technically.* Finally, keep economics in its proper perspective by drawing on other experts for technical treatment of the other considerations to which economic considerations may in given instances be secondary.

How Economics Can Serve Policy Best—The Economist's Task

If economics is to get the consideration in farm organization policy that farm economists might like it to have, the farm organization economist must earn the confidence and respect of his employers. The economist's attitude should be that of a research worker, to consider every solution only a tentative solution. The economist should always be conscious of the background of training that facilitates and conditions his own solutions to economic problems, and he must expect that others will frequently appraise facts differently and will reach different conclusions.

These precepts might not guarantee fame or notoriety but I believe they are the basis for sound personal satisfaction in professional services rendered.

THE DEVIL CAN ALSO QUOTE STATISTICS*

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National Farmers Union

TO START with, let us agree that economic data are used principally as a justification rather than as a basis for legislation. The economist appearing before a committee of Cogress is all too often in the position of a lawyer arguing for his client, and the data presented there or on the floor of the Senate or the House frequently bears a suspicious resemblance to the testimony of an alienist attempting to contribute to the freeing or convicting of a prisoner at the bar.

The illusion that a massive array of figures and their factual presentation can be managed without regard to the passions and the unpredictable motives of mankind is simply another facet of the larger illusion that economics exists apart from life in general.

This is not to say that statistics and their use are not important in the consideration and disposition of legislation. Rather, the point is that members of Congress do not make up their minds on the basis of cold logic. Issues are decided not by statistics but by votes, and back of that by a complicated interplay of the factors ordinarily summed up in the word "politics."

Economic data *are* important in the handling of legislation but they are important in far different fashion from that ordinarily conceived. The questions to be asked are not, What do the facts prove? or, What are the cold figures on this? but, Whose figures are they? and, For what purpose are they produced?

Occasionally, such data are of very great importance in floor debate. An outstanding recent example has been provided by Senator O'Mahoney of Wyoming, always one of the fastest men with a chart in the history of Congress. Senator O'Mahoney was not an original advocate of the bill that finally became the Employment Act of 1946. As always, he assured himself of his grounds before commiting himself. Once he had decided to lend his support, however, the Senator threw himself into the compaign for enactment with customary shrewdness and vigor.

To this observer his floor performance the day before the bill was passed by the Senate was the most effective of all presentations

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made during the debate. For this show—and that was what it was—the Senator of Wyoming set up on the wall of the Senate a chart stand and charts. Then equipped with pointer he proceeded to give his colleagures a lecture in economics that for clarity and simplification can stand as exemplary.

When he had finished, the debate also was ended. A bill that at one time had been controversial in the extreme passed the Senate without a record vote.

But such instances are relatively rare. Every Senator and every Representative of course fortifies himself with documents and statistics to bolster any major argument he may make on the floor, and not infrequently the walls of one chamber or another are adorned with graphs or line charts or symbolic presentations, these ordinarily for inspection merely.

The usual forum of the economist and his data in Congress is in committee hearings. There, too, the earlier observations hold good. Every series of Congressional hearings becomes at one stage or another a battleground of economic charges and countercharges. Some of the data, indeed, have become hoary with relative rapidity, as in the case of those figures invariably presented by one perennial witness to prove that prosperity in the United States requires nothing more than the assurance to the farm population of one-seventh of whatever national income is desirable.

It will be of considerable interest to agricultural economists to pursue the hearings of the House and Senate Committees on Agriculture this autum and winter with a view to assessing the *uses*, to which data are put. I venture to predict that in these hearings on long-range agricultural policy the same figures will be used by varying witnesses to prove mutually contradictory points. Income figures will be adduced to show that the American farmer is better off than ever before and to prove that he is being victimized by other groups in society. Statistics of production will be paraded to prove, on the one hand, that the more prosperous one-third of farmers are the only farmers who ought to remain on the land, and, on the other, that the Nation faces early expiration unless the poorer two-thirds are authoritatively assisted with Federal funds and sanctions. Precisely the same data will be offered by the advocates of centralization of public agricultural programs and the proponents of stronger State programs and controls.

In short, I suspect that both Dr. Schultz and Congressman

Andresen will be forced to rely upon the same tabulations as to imports and exports, yet no one expects them to arrive at remotely similar conclusions either as to the past, the present, or the future, of American agriculture in the world complex.

In still another aspect of the National scene, economic data enter into the disposition of legislation. And very often their role here is of more far-reaching and immediate significance than in specific conflicts in Congress, whether on the floor or in committee. This is in the work of the established economic arms of the Executive branch of government and of those economists who act as advisers to principal officers of that branch.

The most striking recent example of the impact of data upon governmental action is, unfortunately a somewhat negative instance. I am thinking of the estimates made just about the time the war was drawing to its end that there would be 8 million or more unemployed in the United States by the spring of 1946.

Through the winter of 1945-46, the great debate over the Employment Act of 1946 was in progress on Capitol Hill. There is no question that this prediction had a great deal to do with the success of the supporters of the bill in the Senate. The figure was repeated on and off the floor, in the lobbies, over luncheon tables, until it became a sort of chant, with the vague effect of savage drums in the hills of Somerset Maugham or whatever writer of strange isles. There is no doubt moreover, that it had somewhat the same ritualistic effect upon the considerably more civilized members of the Senate. In sum—they were scared to death, scared of what 8 million unemployed could mean and scared of the lack of preparedness to deal with such a condition.

But by the time the bill was through the Senate the chant of disaster was beginning to grow a little strained. As the House Committee in charge of the bill added procrastination upon procrastination, it become increasingly evident that there not going to be 8 million unemployed, or even 2 millon unemployed, by spring. And as this awareness grew, the going for the bill became harder and harder. In the end it was only by dint of strenuous exertion upon the part of the Administration, and of a number of compromises in wording and substance, that the bill was enacted into law.

Now, the estimates upon which that prediction was made were of course carefully and arduously worked out by extremely able members of your professions. But to some of the lay members of the

government, their unreality became obvious long before it did to many economists. I remember, as an example, that Mr. Chester Bowles once told me that he had lopped 2 million unemployed off the figure that had been presented to him for use in a speech. He could not prove that the economists were wrong, but his common sense told him they *were* wrong. And, even with the 2 million deducted, it turned out he was only somewhat less wrong than his advisers.

Sometimes I suspect that it is the memory of this episode that prompts the President's Council of Economic Advisers to hedge about its reports with the near-divinity of safety that lies in multiplicity of statement, extension of analysis, and exclusion of the controversial. But who can blame the members of the Council if they prefer, from the example cited, to walk warily at this time?

In any case, the data compiled by economists in the Executive branch and issued for whatever purpose frequently may have an impact of major significance on legislation, and, indeed, these economists are well aware of the fact. All too often, those in charge of such work have bearing heavily upon their souls the knowledge that not only the legislative committees of Congress may be influenced by their report but the appropriations committees also. And this is a fact not the most conducive to objectivity.

Let it be said, however, that their fellows may well be proud of the extraordinary degree to which such agencies as the Bureau of Agricultural Economics, the Bureau of Labor Statistics, and others, through the years have declined to yield to the exigencies of political necessity, and by that obdurate insistence upon the right of free inquiry have built a tradition and an institution of governmental economic research perhaps unparalleled at any time elsewhere.

There is one final means of bringing economic data into play in relation to leigislation, and that is in the resort to public opinion directly. I am thinking of such instances as that in the Hoover Administration when some scores of economists, including those most eminent in the profession, signed a joint denunciation of the Smoot-Hawley Tariff Act and predicted the disasters of economic war that followeed.

The statement had a profound, though delayed, impact, and it was one of the important contributory factors in the enactment of the Reciprocal Trade Agreements Act. It is true, of course, that the agile brain of Mr. Charles Michelson and his adept use of the state-

ment for the partisan purposes of the time, contributed greatly to its practical usefulness. Mr. Michelson, you will recall, was then the publicity director of the Democrtic National Committee, and, indeed, a good deal more than that. But the fact remains that by such an impressive appeal to public opinion economists did what they could—and it was a great deal—to the shaping of legislation that I think most of us agree was badly needed.

I fear that the general shading of this apparently heterodox and assuredly rambling paper is dark, but pessimism is not at all its intent.

After all none of us pretends to infallibility nor are we ignorant of the fact that the Devil can quote Scripture to his own ends and sometimes more patly than the righteous man. It seems to me, then, as I look back over what I have said, that there are two points to be made in conclusion.

One of these is that economic data, however honest and painstakingly compiled, vary widely as a basis for legislation. This is natural, since legislation is the product of conflicting human strivings made manifest through those imperfect instruments, ordinary men. The importance of data to legislation, however, varies also with their relevance to the immediacies of the moment, and it must be emphasized that those data that seem of no consequence at a given time may contribute materially over a span of years to the making of laws, which at bottom are simply society's organized response to needs. In this sense, therefore, economists may be said to be working as much under the eye of eternity as far the exigencies of the present and may well work secure in the assurance of pride and dignity of their profession.

The other is in a way the obverse of the same coin, and that is, that economists have a deep obligation to make sure that the objects of their research *are* relevant, that they are relevant to the life of the people. It is not the economist's province to predict the results of his work in advance, any more than its use after completion is chargeable to him. But it *is* very much his duty to give his attention to objects that are of significance. If he does that he may be sure that some day the work will bear in one way or another upon laws and living. More than that, he will know that he has worked not as an irresponsible who has gratified his taste for intellectual pastime but as a valuable member of a society to which he has added that something he is best equipped to contribute.

PROBLEMS OF EFFECTIVE PRESENTATION OF AGRICULTURAL ECONOMIC DATA TO THE MEMBERSHIP OF FARM ORGANIZATIONS*

L. C. HALVORSON
National Grange

TO BEGIN with I need to explain that the topic which I have agreed to discuss at this session is "Problems of Effective Presentation of Agricultural Economic Data to the Membership of Farm Organizations." However, when I accepted the invitation to present a paper at this session I indicated that I would want to touch also upon the broad aspects of the role of the farm organization economist.

From my contacts with the other farm organization economists, I am certain that our work and experiences vary a great deal and that our opinions and impressions also vary. For this reason there is not much risk of repetition, even if I should touch upon the same points as my colleagues from other farm organizations in discussing the general nature of my work.

I believe that the nature of my work may be of interest in two respects. First, it indicates the broad scope of the problems which confront a general farm organization. Secondly, it is good evidence of the need for a broad curriculum for students taking agricultural economics.

My work as the economist for the National Grange does not involve the presentation of any appreciable amount of data or information to our membership. Most of the material I present is presented to the officers of the National Grange, the officers of the State Granges and to committees of the National Grange. The later group consists of the State Masters and their wives. In this paper I will discuss the problem of effective presentation faced in all aspects of my work.

The reason why my work does not involve the presentation of any great amount of data or information to the membership of farm organizations is that the Grange has an information division. For the most part, the rank and file members of a general farm organization want only a few facts presented in journalistic fashion.

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

For this reason each of the major farm organizations employs information men. Putting economic information, and even economic reasoning, into such form that it will receive the attention of farm people is a profession in itself.

Through a subsidiary corporation the National Grange publishes weekly the *Washington Farm Reporter* and the *Farm Commodity Report*. The information man is, of course, the editor. I give no assistance whatever to the preparation of these reports. The information man for the Grange has had years of experience as chief of the farm news service for one of the largest press associations. Because he also writes columns for a number of farm magazines, and also for the Grange papers, he keeps more up to date on currrent economic data and developments than I.

However, my services are available to the information man in connection with some of his work such as the preparation of press releases. Sometimes historical data are needed or the calculation of index numbers may be desired. Occasionally I supply an idea or line of reasoning. Last Spring when the Executive Committees of three farm organizations met together, the economists were asked to prepare a statement on the price situation. We brought together the pertinent data and supplied the basic idea without much attempt to make the statement journalistic. Next the information men got together and reworked our statement into final release form.

The *National Grange Monthly* reaches many of our members. Occasionally I am asked to bring together information in table form for use in an editorial by the National Master. Usually the data called for are easily presented. However, I have some minor observations. To most farm people footnotes are more confusing than enlightening. Frequently it may be necessary to sacrifice accuracy for clarity. Data in tables should have all the zeros added right with the figure, if possible, and the column should not be captioned "in thousand," "in millions" and so on. Almost everyone can understand $25,000,000,000 or even $25 billion but for some reason $25,000 million confuses many people.

The way to create interest in health statistics for example, is to compare the rural health situation with the urban health situation and show just how lacking the rural situation is. Comparisons of mortality rates and figures indicating preventable deaths stirs interest. Of course the use of short sentences of simple construction

makes for effective presentation. Subheadings and pictures scattered throughout articles are very helpful.

We reach our Grange members sometimes through material prepared for the lecturer's program. Question and answer type of material seems to be most effective. Somehow it seems that if a question can be raised in a person's mind he will look for the answer, while the answer by itself might not make any kind of impression.

Government agencies at times are anxious to reach farm people with a message. Often we cooperate by asking them to prepare a tentative draft for a lecturer's program. Before the material is duplicated I add my suggestions. The Farm Credit Administration prepared good material on land inflation which was sent to our 8000 Grange lecturers. At times the material submitted to us has had to be discarded. Many people do not know what is meant by such terms as deficit spending, fiscal policy, compensatory fiscal policy, progressive and regressive taxation and so on. While most people know what Blue Cross is, some have never heard of it. In most instances it is best to proceed on the assumption that people know nothing whatsoever about your subject. Even if they have some prior knowledge a little review will serve a good purpose.

The main task in preparing material for a lecturer's program is to choose a few important points and discuss them in a direct interesting manner. Data on price behavior and foreclosures may impress an economist but most people would be more impressed by a little story about the troubles of a farm family in Iowa who bought a farm at the peak of the land boom after World War I and had to give a mortgage.

I mail out a substantial volume of literature to State Grange officers. Much of this is literature which I have selected from the writing of others because of its worth. It is a big job to simply select from all the literature that comes to our office, material that is well written and of interest to State Grange officers. In many instances significant articles are too technical for the average person.

The Grange has a number of session committees which draft policy recommendation for approval, modification, or rejection by the delegate body. To some extent I service these committees with appropriate material. Between sessions I act as sort of a secretary for some of them. At National Grange Sessions I act as a consultant It is difficult to describe what I consider good material suitable for distribution. Here again the language must not be too technical

and data in chart and table form should be presented wherever possible. The tables and charts must be easily understood as they generally are if set up according to accepted principles and methods.

From a few observations, I believe that line charts are not as well understood as bar charts or charts showing some proportion of size of the variable.

Farm people and farm leaders do not like long articles or memoranda. If what is being said cannot be shortened, it is best to break a memorandum up into several memoranda and submit them with some time space between.

Somewhat related to the problem of presenting data or information is the problem of obtaining information. I had one experience with questionaires that may or may not be significant. Last year I prepared a detailed four page questionnaire on health activities and sent one to each of the State Masters. It may have been the fault of the questionnaire, but it seemed that many of the State Masters did not like to fit the health activities of their State Grange into the mold of a questionnaire. This year in making a survey of the health activities in the various states, I simply listed seven points relating to health and asked the State Masters to say whatever they had in mind on those points.

I believe that response to a questionnaire will be better and possibly the quality of replies will be better if people being questioned are given as much latitude in replying as possible. This may not apply to all situations but I believe it does when only general information on the progress of a program or on some situation is desired.

Most of the data, information, and economic reasoning which I present are presented directly to the National Master, and the National Grange Executive Committee. I have indicated above that I do send some material to State Masters. Presenting material to the National Master and the Executive Committee is not very much of a problem of form. Agricultural economic data are simply presented in table or chart form. Information, for example, on how the crop insurance program operates, is presented in direct language. Economic reasoning is at times very difficult to present, not only because it may be very abstract but also because the farm leaders may be antagonistic toward certain theories. Nevertheless when asked for his ideas on a subject I believe that a farm organization economist should always present what he believes is sound.

Some very delicate situations arise when a farm organization economist is of the opinion that the policies of his organization are unsound, and if he at the same time subscribes to a theory which his organization may be lashing out at.

Before I started working as a farm organization economist, I reached an understanding with my employer that I would always present what I thought was sound, even if I knew it was not in harmony with the organization's policy. On the other hand I was never to publicly criticize my organization's policy, but I was free to express my ideas to those responsible for determining policy.

Some fellow economists may disagree with the view that it is proper for an economist to present arguments for use by a farm organization in support of a policy that he considers wrong or unsound. However, there are usually two sides to every argument and an economist should understand an issue well enough to be able to present all sides. There may be some question as to the propriety of an economist helping with the manufacture of plausible reasons, however specious he may know them to be, in order to help rally support for some activity or policy. I have never been asked to do this.

Even though a farm organization economist recognizes that his organization may be opposed to the policy recommendation of economists, he nevertheless wants to, and feels he should, present the economist's reasoning. To do this without creating antagonism is a problem. However, a farm organization economist soon learns how to get a friendly and receptive hearing by some method or other.

My experience indicates that a farm organization economist should not take the attitude of an advocate. He must take the attitude that he is there to explain the economist's reasoning or to explain why economists consider this one policy unsound and why they consider that other policy sound and so on. If you present the economics of a policy problem as the reasoning of the economists and not specifically as your own reasoning, it takes away the element of personal feud, even though it is understood that you subscribe to the reasoning. While this may not be an ideal approach, your listeners at least keep an open mind.

Rather than present arguments that are hard to follow or understand, it is best to deal in simple facts and incontroversible arguments and to spend most effort emphasizing them. Rather than

argue, for example, that freer world trade would permit greater specialization and more efficient use of resources, it is best to set up a simple illustration of the advantage of two countries trading, say automobiles and wool. It is well to point out easily grasped facts such as (1) exports reduce the amount of goods available for domestic consumption and imports increase the amount and (2) it is necessary for us to import goods if foreign nations are to have dollars with which to buy from us. If analysis of past data clearly shows a stimulus to agricultural exports from lower tariffs, this can be shown to advantage. It is well to emphasize that our standard of living cannot be reduced if we maintain full production at home, and that imports on top of full domestic production will increase our standard of living.

I have learned that economists sometimes engage in abstract reasoning without sufficient regard for difficult situations in which policies may operate. It is the responsibility of administrators to fit policies into such situations. This often requires means and measures not in conformity with pure economic theory. Economists should take care therefore to approach all problems with an open mind, for frequently they may be called upon to analyze which is the lesser of two evils.

After enough discussion with Grange officers, we usually come to understand each other—how our points of view differ and frequently how we quite closely agree. If freer trade would tend to shrink the agricultural sector by an economic squeeze, I do not blame farmers for wanting high tariffs. Also I recognize there is some merit in the argument that it may be worth something to a nation from a social standpoint to keep more people on farms in rather prosperous conditions as might be done by tariffs on farm products. A farm organization economist must recognize that farm organization policies are determined not solely on the basis of economic considerations.

By showing full regard for the farm leaders' point of view and not taking the attitude that their arguments are outweighed by your own, or that their policy is morally wrong, it is possible to present the purest type of economic reasoning in theory and get a very receptive hearing.

Now that I have discussed problems of presenting economic data and reasoning to the membership and officers of a farm organization, I would like to indicate the nature and scope of my work as the economist for the National Grange.

One of my duties is to bring together pertinent data on problems before the National Grange. The National Grange is very interested in revising the parity formula for example, and of course data are needed on prices received by farmers for the various commodities as well as prices paid. Calculating parity prices according to the formula proposed by the National Grange and according to other formulas is one of my functions.

In presenting testimony before Congress and before Government agencies it is at times necessary to bring together a large body of data and to put them into suitable tables or charts. Sometimes the National Master or the Legislative Counsel requests specific data but again it is up to me to determine what data might be helpful.

Grange leaders want to be currently informed on prices, wage rates, interest rates, profits, marketing margins, the Federal budget and so on. It is my job to bring to their attention in convenient form, significant data and significant changes in economic conditions.

Farm organization officials expect their economist to keep a large volume of economic data in their memory. When participating in unrehearsed radio program and on other occasions, time is not allowed for reference to source material.

Federal aid for education is one of the issues before the National Grange. It is my job to bring together data by states on income, taxable property, number of school age children, school enrollment, length of school term, expenditure per student, teachers pay, migration of rural youth to cities and other such data bearing on Federal aid for education.

At the Annual Session of the National Grange, I am usually called upon by several committees to help them prepare their policy recommendations. They too want to hear the economist's viewpoint, or they may simply want information. At times they may tell me to write up a tentative statement and then they go over it and change it to suit their ideas.

Data are not the only kind of information which I may be requested to present. Grange officers or people may want to know more about how marketing agreements are set up and operated. Questions may be raised about the ITO, the FAO, or the whole United Nations set up. Sometimes specific questions are asked. For example they may want to know what proportion of the cost of a water pond are paid by the Conservation Program.

I have already indicated that a farm organization economist is called upon for economic advice and counsel. My duty is frequently to read over testimony prepared by the National Master and to see if I find anything incorrect or unsound, and possibly to suggest additions or a new approach.

We receive many research reports and articles on economic problems at the National Grange office. To the extent time permits, I read these reports and mark for the National Master's attention the significant statements.

Frequently the comments of the National Master are desired on material sent to us. If time permits, he studies the material, and prepares his own comments. On other occasions he refers the material to me or if he does not know the author. If the comments are sent out under his signature, I try to reflect his thinking.

So many good books and articles are published on subjects pertinent to our work that it is impossible to review more than a small proportion of them thoroughly. Good summaries in articles and books aid us in keeping up on the various fields of thought to some degree.

The Master of the National Grange was a member of the advisory Board to the Office of War Mobilization and Reconversion. This agency initiated a number of economic studies and the economists of the organizations represented on the Advisory Board met with the research staff of OWMR to review the research results. The first research study which I reviewed was the wage price study completed in the late fall of 1945. Except for the labor economists almost everyone argued that it was not possible to raise wages 24% and still hold the price ceilings, where they were—something the original study purported to show as being possible.

Another study undertaken by the OWMR research staff was a guaranteed wage study. Here too the economists for labor, business, and farm groups looked over the study and offered their suggestions. Many of the suggestions were taken into account in the final report. Because both labor and business economists looked upon each other as being biased in evaluating these reports, a great deal of weight was attached to what was said by the farm organization economists.

I mention these two OWMR studies and my contact with them to indicate the wide scope of affairs which a farm organization economist must deal with and also to indicate that it has come to be

quite well established that the behavior of business and labor is of direct concern to farmers.

There are all kinds of meetings which I am called upon to attend. It may be a meeting called by the Federal Crop Insurance Corporation to consider problems of extending crop insurance to potatoes, it may be a meeting in the State Department to discuss ITO, UNESCO, or problems of denazification. UNRA may want our advice on setting up a campaign to get contributions from farmers of livestock to be shipped to war torn countries. The National Educational Association has meetings of various kinds and we are asked to participate. There are meetings sponsored for traffic safety, farm safety, fire prevention and so on. The Office of Education has a Citizens Federal Committee to deal with the teacher crises. The Retaining and Reemployment Administration had an Advisory Committee and wanted farmer representation. Recently the Senate Committee on Civil Service appointed an advisory committee and as the alternate for the National Master I usually attend these meetings. The National Post War Conference, now the Conference of National Organizations, meets several times a year to consider major national problems. I have attended several of these conferences and at times it is my job to present a paper for the Grange

One of my big assignments is in regard to the National Grange Health program. This is more in the field of sociology than economics but because of a limited staff at the National Grange Office, I do considerable work on health. Much of the work is promotional in nature—that is, trying to get State Granges to sponsor group hospitalization and surgical care or to organize cooperative hospitals and clinics, and trying to get farm people to avail themselves of the benefits provided by the Federal Hospital Survey and Construction Act.

The inability of many farm families to pay for adequate medical care is an economic problem on which I am expected to develop some helpful ideas. It is my job to be informed on health issues, health conditions, health programs, and so on. There are usually several meetings a year to attend on health programs. The Farm Foundation has brought the farm organizations together in a Conference Committee on Rural Health Services, and the American Medical Association sponsors a Rural Health Conference and holds meetings during the year to get the advice and cooperation of farm

organizations in their effort to improve the availability of medical care in rural areas. The Cooperative Health Federation of America is another organization we work with on health problems. On one occasion I testified before a Congressional Committee on a health bill.

A characteristic of my work as a farm organization economist is not only the scope but also the number of assignments that come to me. In my previous employment I was allowed enough time to thoroughly study every aspect of the problem at hand. In my present work, however, a new assignment never waits for the old one to be finished to my satisfaction. A farm organization economist, I find, should be so well informed and his ideas on any one of countless subjects so well formulated and considered that he does not need to stop for much reading or thinking. Because of this, a farm organization economist must develop to a large extent on experience.

If a farm organization economist is not familiar with all the source materials and if he does not have them on hand, the next best thing is to know who can provide them. I find that usually there is someone in the Government whose work relates to the question or problem before me. These people can frequently give me the data or information I may want over the phone. They are usually so familiar with literature in their field that they can refer me to the best information on the subject I am interested in. This saves me much time and permits me to get more work done. Sometimes by having a luncheon with a person in the health field, for example, I can get as many questions answered and learn as much as by spending a whole day hunting for literature and reading what I may find.

As the economist for the National Grange I do very little original research. Generally there has been more research done on problems that come before the Grange than I can find time to read. Under these conditions it would be unwise to spend a great deal of time on original research projects. Government agencies and colleges usually follow important economic problems so closely that research is nearly always available right up to date.

I have done a small amount of research on parity, and probably some of the economic analysis on other problems comes close to research in theory. I do feel that some points in the farm program of the Grange should undergo research analysis, but the pressure of day to day work prevents this. Usually the best I can do is to point out, for example, that benefits from diversion to lower uses, that is,

a multiple price system, depends upon elasticities of demand, but I have never had time to actually work a situation through for a commodity.

In connection with research work I should mention what I believe is a unique situation in the Grange. In Washington we have the Potomac Grange. Membership of this Subordinate Grange is made up of many professional people from nearly every possible field, employed both in and out of the Government. Every year study groups are organized to work during their spare time on specific problems outlined by the National Master. Frankly, I must say that I could never turn out as good a study on "Necessary Improvements in Rural Education" as the professional education people. Similarly people in the State Department, in the Office of Foreign Agriculture Relations, in the tariff commission, and people employed by private export associations can answer questions raised by the National Master on ITO and commodity agreements very exactly and very fully. I work with these study groups and make what contributions I can. Probably my chief function on study groups is to indicate, as best I can, the exact questions the Grange wants answered.

As a final word I want to say that my work as a farm organization economist is most interesting. Because farm organizations are interested in nearly everything that happens both in and out of Government, a small staff means that work is extensive and not intensive in nature. As much assistance as possible is sought from the outside in obtaining data and information and even in getting research done. Problems of effective presentation are mostly a matter of maintaining clarity as far as the economist is concerned and journalistic technique as far as the information man is concerned.

DISCUSSION*

W. GORDON LEITH
National Council of Farmer Cooperatives

In recent years many national business, labor and farm groups have added economists to their staffs. The papers presented this evening show that economists are making valuable contributions to farm organizations—they are not added to staffs merely as a matter of fashion.

* A discussion presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

The papers you have heard this evening could possibly be presented in a more lucid manner by the administrative heads of farm organizations. Most professional people display a degree of modesty in discussing the role they play in their respective bureau, department, or organization. However, I believe my colleagues have tempered their modesty by a desire to be factual and informative.

These papers should be of considerable interest to the fraternity of professional agricultural economists because farm organizations do swing a great deal of weight in the determination of national agricultural policy. It should be of interest, therefore, to see what role economists play in the formulation of policy, what are the needs for basic economic data, what are the problems in presenting economic data to members and how is economic data used as a basis for legislative action.

Let me turn first to the subject of the need for basic economic data. Farm organizations leaders use economic data constantly. They find it necessary to keep up to date on current matters relating to agriculture and to our whole economy. They must view economic data, not as mere interesting facts, but rather as a contribution to their thinking on action and policy matters. By and large basic data on acreage, production, wages, prices, etc. are readily available. It is merely a matter of putting one's finger on it. In this respect the organization economist is often called upon to assemble data, analyze data and put it in a desired form for specific purposes. At times member groups call upon the organization economist to provide them with economic data to be used in articles or speeches.

Fairly complete data is available on major farm products but at times there is a need for economic data on minor farm products. A certain amount of data is available from federal agencies, trade groups or trade publications but it is oftentimes rather fragmentary.

Summary data is oftentimes needed by farm leaders to get a quick and accurate grasp of a situation without wading through a large stack of publications. Examples of what I have in mind are—What is the situation on processed foods inventories? or What marketing agreement programs are in effect as of a given time? If this summary information is not readily available the organization economist may be called upon to bring it together. In meeting this need for summary information the various "Situation" reports published by the BAE are of considerable value. The new "Agricultural Outlook Digest" will also fill a need.

Turning to the field of cooperative marketing and purchasing we find data readily available on the number of associations, number of members, and volume of business expressed in dollar units. At many times it would be of value to have volume of business data expressed in physical units especially in a period where price changes are large. I realize that this is no easy task.

About ten years ago a comprehensive survey was undertaken of all the marketing and purchasing cooperatives in the country. The resulting statistical handbook contained a wealth of important data. This publication is now outdated and a revision would be of considerable value.

Very little information is available on cooperative activity in our econ-

omy other than that coming under the classification of "farmer" or "consumer." A brief study I made a year ago showed that principles of cooperation and mutuality are very widely applied as to products and services. Examples are retailer cooperatives in the grocery, drug and hardware fields, where retailers have established cooperative wholesale organizations. Literally scores of types of cooperative or mutual businesses could be listed. Some are only quasi-cooperative in nature, while others adhere more closely to cooperative principles. What information there is on these miscellaneous cooperative groups is outdated and fragmentary.

Turning back briefly to statistics on farmer and consumer cooperatives one finds there is some overlapping the statistics published by the Farm Credit Administrtaion on farmer cooperatives and those of the Bureau of Labor Statistics on consumer cooperatives. Statistics of farmer cooperatives tend to neglect the various types other than marketing or purchasing such as artificial insemination associations and mutual irrigation companies to name but two.

Before leaving this discussion of economic data I wish to comment briefly on a related subject. Many plans and proposals have been put forward by economists and others to improve certain agricultural conditions. A fault which is recognized by farm leaders and congressional committees is that so often these proposals, while sound in principle, are vague in details. As one example the parity formula has been a much discussed subject. Proposals for modernizing parity or shifting to a new formula usually contain only the bold strokes, and the details are left to be filled in by someone else.

The second and third papers deal with the actual functions of the organization economist. Dr. Herrmann first creates the impression that the role of the economist in the formulation of policy is fairly limited. However, in developing his paper it is seen that the economist makes many contributions to policy even if some of them seem to be around the fringes of the policy-making process. It should be remembered that economists are relatively recent additions to the staffs of farm organizations and it does appear that their influence is growing.

Basic policy of farm groups, as Herrmann indicates, is apt to be changed slowly. Major policy reversals are almost never made. It is far easier to adopt policy on a subject of a virgin nature to a farm organization than to change a policy that an organization has stood for and fought for over a period of years. This tends to limit the role which any employee of a farm organization can play in policy formulation.

Dr. Halvorson has pointed out that policies of farm organizations are not determined solely on the basis of economic considerations. However, in determining policy, farm leaders should be aware of the economic implications involved and these combined with other considerations will add up to the adopted policy. Membership of farm organizations varies considerably as to geographic location, commodity representation, and political belief. This tends to discourage narrow and selfish points of view on major issues and adds balance to policy decisions.

The point is also made that the views of the economists sometimes vary

with those of his organization. No employer wants a strictly "yes" man on his staff. And speaking of diverse views, even members of the group meeting here this week are at wide variance on several important agricultural issues.

Dr. Herrmann speaks of adding "flesh and blood to the sometimes bare bones of official resolutions." In some cases the vagueness of a policy statement leaves doubt as to the type of body one is supposed to build on the official bones. Policy arrived at by compromise may be a masterpiece of double meaning.

As Halvorson has so well illustrated in his paper the farm organization economist is called on to perform many duties. As a result the time that can be spent on detailed analysis of any one policy problem is limited.

Before leaving the subject of the role of the economist in policy formulation I should like to call attention to the contributions of economists who are not employees of farm groups to the policy-making process. Not only through their writings is a contribution made, but in recent years many outside economists have appeared before sessions of farm groups considering policy matters. Not all farm leaders regard college and government economists as long-haired theorists.

Dr. Halvorson's paper is in two parts covering the presentation of economic data and a description of his work as a farm organization economist.

The subject of effective presentation of data brings up many problems. One criticism frequently heard is that farm organizations speak only to the farm audience. In other words on such issues as taxation of cooperatives or the high cost of food, to use two examples, it is said that the farmer's point of view must be made known to businessmen and consumers in general and energies should not be exhausted in trying to inform or convince those already on one's side. This appears to be a legitimate criticism and it is one to which information and public relations personnel are applying themselves.

Many avenues of information are used by farm groups such as news letters, magazines, special reports, meetings, and press releases. Frequently farm organizations mail to their members, board of directors, or to committees concerned, copies of bulletins or reports issued by federal and state or private agencies. In using information channels it is necessary that economic data be in an understandable manner. For example, a person should make sure that his audience knows the meaning of such things as FAO, IFAP, and ITO if he is using them. Words and phrases should be understandable and the use of highly technical terms should be avoided. This point was emphasized by the Retail Trade Advisory Committee to the U. S. Department of Commerce who in a recent report listed as their first resolution, "we recommend that publications for retailers should be written in the economic language of the 'Main Street' merchants."

The use of good summaries is important in the presentation of economic data and information. The manager of a western poultry cooperative stressed this point in a recent meeting repeating the often heard criticism that so much material passed over his desk that he was able to read only a small portion of it. His solution was to assign it to an assistant to ferret

out information considered of importance to the manager. This manager called for more summaries. Many agencies issuing publications use summaries, and the trend appears to be to place them in the beginning where they will be spotted immediately.

I think the recommendation that all the zeroes should be added when presenting data in table form is somewhat over-zealous.

Halvorson has outlined in considerable detail his work as a farm organization economist. Many professional economists will be impressed by the extremely broad and varied nature of his work. This is true in varying degrees for economists of all farm organizations but is more true for those employed by the general farm organizations as contrasted to the more specialized farm groups. It is seen, however, that these many duties have an economic thread running through them. The variance of duties results from the fact that farm groups operate on modest budgets with resultant small staffs.

Mr. Smith in discussing the use of economic data as a basis for legislative action has put forth some interesting observations. Economic data is used extensively in legislative work. It is used by proponents or opponents of bills in testimony at hearings. It is used by Congressmen in debate on the floor. Congressmen are continually calling on government bureaus or the Library Reference Service for facts or figures.

The paper points out that given data will be used to support diverse points of view. Does this imply a weakness of the data or does it indicate the strength of convictions of those using the data?

A point is made regarding the faulty prognostications of some economists that there would be heavy unemployment shortly after V-J Day. It is true that these predictions had an effect on government action but again I ask does this show a weakness in economic data or does it show the limitations of the human mind? The points raised by Mr. Smith indicate that more stress should be placed on objective interpretation of economic data.

THE ROLE OF SAMPLING IN FARM-MANAGEMENT RESEARCH*

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THE ever-changing phenomena of how farmers make a living with the resources they have available cannot be brought into the laboratory for analysis and study as can the phenomena of many of the physical sciences; nor can such phenomena be investigated by controlled experiments as is the case with many of the natural sciences. Social science research depends upon the valid analysis of representative observations of continuing ever-changing complex processes. In farm management, one of the social sciences, representative sampling is essential to valid conclusions and generalizations.

Research in farm management has always been based primarily on data concerning the operation of individual farms. Both farm-account records and farm-survey data are used. The farms from which these data are obtained are in fact "samples" of farms.

Of the 251 research projects reported as in progress in 1940–41 by the Social Science Research Council only one dealt with "sampling procedures." The report of the subcommittee on farm management[1] describes and classifies these 251 projects in that field. It also points out that appropriate objective sampling techniques are essential in practically all phases of these projects.

A few weeks ago I wrote to agricultural economists in some 20 agricultural colleges, stating that I had been assigned this topic and asking for their ideas concerning the more important problems that are commonly dealt with in farm-management research, together with some indication of the relative importance of these problems. The replies helped a great deal especially as several pertinent questions were raised concerning the application of sampling principles to various types of problems in the field. Briefly here is the gist of these letters.

Current problems in farm-management research involving sampling appear to fall into three main groups:

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

[1] *Farm Management Research 1940–41*, Social Sci. Res. Counc. Bul. 52, 1943, a report by the subcommittee on farm management—Walter W. Wilcox, Sherman E. Johnson, Stanley W. Warren, Social Science Research Council.

(1) *Current description of farm organizations and farm practices and changes* resulting from the effects of improved technology and from the impact of environmental forces such as high farm wages, prices received and paid by farmers, high prices of farm land, and weather. Apparently this information is needed by type of farming areas, by types of farms within such areas, by size of farm, etc.

Mr. William G. Murray of Iowa says, "In doing this work much more needs to be done than merely summarizing census data. . . . What we need to know is not only the predominant type in any area and how the area is delineated but also the *frequency distribution* of different type combinations within the area."

(2) *Ascertaining the factors that affect differences in net income:* In this group are included influence on returns of size of business, farm organization, combination of enterprises, farm lay-out intensity of operations on returns, and production opportunities. Also included are the relative efficiency of size of business and of tenure and leasing arrangements. In Oklahoma for instance, situations resulting from tenure and leasing arrangements are preventing badly needed adjustments in farm organization.

George Aull of South Carolina specifies particularly the "economics of 'small' farms and corporate versus individual management."

Speaking of factors that affect financial success Lynn Robertson of Indiana says "In the past considerable emphasis has been given to this problem. Principles have beeen established so firmly that farm-management research needs to be refined beyond these objectives. We need more information on how to secure large livestock receipts per dollar's worth of feed rather than to establish that receipts per dollar's worth of feed is an important factor."

Mr. Robertson then suggests the importance of the third group of problems which are also mentioned frequently in many of the letters.

(3) *Ascertaining the profitableness of enterprises, methods, and practices:* This group contains farm-enterprise studies which involve input-output relationships. Walter W. Wilcox, Wisconsin, mentions two studies of this type. One was a study of tractor farming with horses in addition to a tractor and tractor farming without horses on one- and two-man farms. The other was a study of the reduction in man-hours per cow (chores) brought about by an increase in the size of the dairy herd. This study was made in each of two type-of-

farming areas among farmers who sold fluid milk wholesale and those who sold to a cheese factory. Approximately an equal number of farm was selected by size groups.

So much for the three main groups. The letters mentioned additional problems such as land use and interregional competition (Indiana); seasonal distribution of farm labor, requirements for farm labor by type-of-farming areas, principal crop and livestock enterprises by K. C. Davis of Oklahoma; and "finding new ideas which wide-awake farmers are trying on their own" (Iowa). The budget-analysis approach with "typical size and type farms" was also suggested as a means of projecting the effects of proposed adjustments in farm organization under varying economic conditions.

Sampling Problems

Most of the replies mentioned practical problems in sampling. Farm-management research people generally recognize the desirability, if not the necessity, of having a representative sample in studies in the first group—*The current description of farm organizations and practices.*

"In surveying we generally try to get a true sample of the universe" writes one agricultural economist. Another says, "From the sampling standpoint, the problem is to select a sample of farms that will give a representative picture for the individual farms in the area as to current conditions on those farms."

Several mention how lack of adequate funds for farm-management research influences the use of valid sampling methods. One economist says, "Too often a worker is given too little money to make a study and do anything like an adequate sampling job. He has to compromise between the amount of money he has and the sampling job to be done."

Several question, and rightly so, the utility of a strictly random sample in certain phases of research in farm-management. One writes, "If we followed the usual procedure of using a strictly random sample, some of the more important aspects of the study would come up with insufficient data to adequately treat some phases of the study."

Another says, "With the limited number of records usually included in a farm-management study it usually is not desirable to have records of *off-type farms*. . . . Sometimes we deliberately fail to get a representative geographical sample. For example, in study-

ing the influence of soil types on the production of crops of different kinds, we may look for a much larger number of farms of one soil type than the proportionate number for the area because we need to have enough records to get a good average for the sample." Apparently, he means a good average for each main sub-group of the sample.

George W. Westcott (Mass.) states the problem as follows: "The *objectives* of the research must determine the type of sampling required. Completely random samples are needed only if the objective is that of *describing* the agriculture of an area. Most farm-management investigations have objectives which require a high degree of homogeneity if the results are to be meaningful and not obliterated with averages (or arrays) of variables which are the result of the interaction of a collection of heterogeneous fixed factors . . . .

"Most farm-management research requires the stratification of the total universe into 'typical' or modal groups according to the need as determined by objectives. Of course, the theoretical foundation of stratification rests upon the assumption of a complete quantitative and qualitative knowledge of the universe and that the universe is capable of being classified into reasonably homogeneous groups. Stratification techniques as related to farm-management research objectives constitute the most critical problem in the sampling process . . . ."

Frequent mention is made of the lack of representativeness of farmers who keep *farm-account books* in cooperation with the College. The question is raised as to how such a sample can be used as a basis for valid generalization and the development of sound principles of farm management. One economist says, "We are quite confident that our farmers who keep the account books rate somewhat above the average." Another remarks, "Probably there has been some improvement in sampling for surveys, but not much improvement for farm-account books. The problem presents itself as to what questions may be answered with data from farm account books if the sample is not satisfactory for many standpoints."

Closely akin is the problem of another economist. He writes, "Another factor which has always been important in farm-management research and which tends to complicate the sampling procedure is that we must go back to the same individuals rather frequently and for a great many details. This makes the matter of interest in cooperation on the part of the farmer very important. If

he does not have the proper amount of interest, you may lose his cooperation before you have completed the study, or if he does carry on, you would not get the quality of data that is so essential for a careful analysis of the problem involved. For these reasons we attach considerable importance to the opinions of county agents, AAA administrators, and others as to the likelihood that we would get a high quality of cooperation from a certain farmer before including his farm in the sample."

These are all problems that arise in sampling and I shall try to throw some light on them.

The Application of Objective Methods of Sampling in Farm Management Research

Generally speaking, a representative sample of farms, farm operators, or farm owners in an area or in a subpopulation thereof may be selected objectively in three ways:

(1) *List Sampling.*

(a) From an up-to-date list of all the farm operators within an area such as might be available from a complete annual assessors' State census or from AAA records when all of the farmers participate.

(b) From the list of respondents of a large annual cross-section interview sample such as was taken by BAE in January 1947.

(c) From special up-to-date lists that include all the farm operators in a specified category, such as cattle or sheep growers in the range States, commercial producers of important fruit and vegetable crops, or large commercial farms.

(2) *Area Sampling*, such as the Master Sample.[2]

(3) *Combination of Area and List Sampling.*

In most of the 12 States in which annual assessors' agricultural censuses are taken, the data are limited to acreages of crops. This limited coverage of the basic characteristics of a farm greatly reduces the usefulness of assessors' censuses for sampling purposes when broader characteristics are required in specifying the subpopulation to be sampled. Additional "key" items might be added to the assessors' census but the cost might be considerable. In only

[2] "The Master Sample Project and Its Use in Agricultural Economics," by R. J. Jessen, this JOURNAL, Vol. 29, No. 2, May 1946.

a few areas is AAA participation sufficiently complete or representative for use in list sampling.

The January 1947 interview survey of the Bureau of Agricultural Economics of about 14,500 farms is not adequate in size and county coverage in most States to be of much use on a State basis for list sampling or subsampling. However, it could be used on a regional basis or by major type-of-farming areas. New York and Pennsylvania are probably exceptions as the sample in these two States was made up of more than 750 farms. Also it was distributed over most of the important agricultural counties. The problem of keeping the list of these respondents up to date from year to year also arises.

The statisticians in the Agricultural Estimates portion of the Bureau of Agricultural Economics and farm-management research workers have a *field of common interest.* Both need reliable data from a representative sample of individual farms in a given geographic area. The agricultural statistician needs such data as a basis for estimating changes in acreages of the various crops, their production, numbers and kinds of livestock, the production of livestock and livestock products, the number of family and hired farm workers, farm wage rates, etc. The farm-management worker wants a *current description* of changes in farm organization and practices which result from the impact of environmental forces—the first group of problems in farm-management research.

The official BAE estimates which show over-all changes in time are available only as totals or averages for States. The farm-management investigator, however, needs more than this. He needs reliable data concerning the *operation of individual farms* which can be classified by size and type of farm, tenure, similarities in production opportunities, combinations of farm enterprises, etc. He wants *frequency distributions* by these classifications, and he also wants to determine internal relationships for homogeneous subgroups of farms.

If a *large annual preselected interview sample,* say 800 to 1,500 farms in each main type-of-farming area in a State were available, what excellent service could be rendered to the agricultural interests of that State. The agricultural statistician could make and publish estimates by type-of-farming areas within the State, not only for acreage, production, and livestock, but for many other aspects of agriculture, such as farm machinery and facilities, farm population and migration, and other items that cannot be success-

fully sampled by mail. These estimates also could be presented in frequency distributions, frequency of occurrence of farm practices, etc.

The State statistician could use the respondents of the annual interview survey as a representative mailing list for important mailed samples. If the economic, social, or psychological factors associated with the differential response of mailed inquiries were determined, he could stratify and weight by these factors. Thereby much of the selectivity of a mailed sample could be corrected. A better job might be done with a smaller sample than is now used for mailed surveys.

The agricultural statistician could then supply the information needed as to "how many" and "how much." The farm-management researcher would have at his disposal on punched cards some of the data that is needed for testing hypotheses and for understanding the "why" and the "how" of the ever-changing phenomena as to how farmers make a living with their respestive resources under the impact of forces over which they, as individuals, have little or no control. This is a field of investigation that farm-management workers do not enter because limited research funds are expended on descriptive studies.

I have just said that they would have *some* but certainly not all of the data they need to understand the "why" and the "how." In addition, they will want to study *intensively* problems for which highly trained interviewers will be required. Some of these are the problems in farm-management research that go beyond a description of current agricultural changes, the type of problems in the second and third categories—"ascertaining the factors that affect differences in net income" and "ascertaining profitable methods and practices."

For these problems the strictly random sample is not efficient. Rather, a *subsample* of the *large annual sample* could be utilized. From such a sample it is simple to select the type of farm, the size of farm, the particular farm enterprise, the combination of enterprises, or the specific farm practice for studies of input-output relationships and other investigations.

For any particular study the farm characteristics of the subsample could be made as homogeneous as the investigator might desire, within the limits of the frequency of occurrence and variability of items, and size of the sample in the area. A representative

sample of farms by soil types or land classes could be selected and studied as suggested by both Robertson and Hill. A differential sampling rate could be used within the several classes of the frequency distribution.

It is generally recognized that farms of a given size and type are likely to be more desirable as universes from which to generalize than are political areas such as townships or counties.

Hill and Warren of Cornell emphasize just this point.[3] "Obviously one of the first steps is to get a sample of farms which is as adequate as possible for the problem which we propose to investigate. I would like to suggest that in my opinion research workers in the field of farm management have frequently failed to limit sufficiently the objectives of their studies. If one wants to obtain reasonably precise answers, he must usually sacrifice something in the number of questions he proposes to try to answer and draw a sample accordingly. Too often we go after a little information on a long list of questions and scatter our fire; consequently when the study is completed all we can show as results are rather broad generalizations, many of which were probably known or rather obvious before we started. It seems to me that before workers in farm management or other branches of agricultural economics can aspire to calling their efforts "scientific," they must be willing to follow the lead of workers in the biological and physical sciences and limit their objectives, design their samples, and use methods of analysis suitable to the job of testing carefully stated hypotheses. Too frequently we start out to get 'all the answers to all the questions' in one farm-management study."

Another approach is especially suitable for States in which intensive economic and marketing studies of commercial producers of fruits, vegetables, and dairy or poultry products are contemplated. In such States, *complete current lists* of these special producers can be developed for the entire State or for a particular area. Then a sample can be drawn from that list. The list must be current and complete and the location of the farms of these commercial producers must be shown on appropriate maps. A highly efficient sample design can be developed from such a list.

The possibilities of establishing and maintaining current lists of commercial producers have been superficially explored. This is a type of problem that could be attacked jointly by the agricultural

[3] This same principle is brought out in Bulletin 52 of the Social Science Research Council.

statisticians of BAE and the Agricultural Economics Departments of the various State colleges.

It might prove worth while and relatively inexpensive to work with the Vocational Agricultural schools in each State. For example, in South Carolina, which has less than 50 counties, there are 250 such schools with white teachers. This means an average of 5 schools per county. The geographic area served by each school is relatively small and these teachers with their classes would be in a position to establish such a list and to locate the farms on appropriate maps at a minimum of expense.

These lists could be established each spring before the schools close for the summer. They could be checked for coverage by other people familiar with the agriculture of the county. If some idea of the size of the enterprise, acres in commercial crops, number of fruit trees or vines, or size of herd or flock, could be obtained at the same time, this information would be valuable in selecting an efficient sample.

Another type of agricultural phenomena presents special problems in sampling. This relates to commercial crops grown in concentrated *localized* areas because of special requirements of soil, climate or markets, such as peaches, sweet cherries, early vegetables, etc. For studying such farms, either especially designed area segments or list sampling may be utilized. Usually so few farm operators grow these crops in localized areas that a relatively large sample, percentagewise, is required for such studies.

One other sampling problem that was frequently mentioned in the letters from farm-management workers has not been touched upon. That is: How to use the farmers who keep farm-account books in cooperation with the college as a sample?

In connection with this question a quotation from Social Science Research Council's Bulletin 52[3a] is appropriate: "Although it is quite apparent that a large amount of valuable information can be obtained from farm-account records kept by farmers willing to keep them, their research value has been greatly improved where they have been supplemented with similar data on more representative farms. Farm-management workers should recognize that the value of farm-account work lies largely in the field of extension, and in service work to the farmers who keep the records."

A small sample of farms on which farm-account records are kept

[3a] Walter W. Wilcox emphasizes this point in "Research in the Economics of Farm Production" which appeared in the August 1947 issue of this JOURNAL.

could be a valuable basis, because of the completeness and accuracy of the record, for developing rational alternative hypotheses which might be tested on a larger and more representative sample of farms. In fact, our hypotheses require repeated testing with representative sample observations taken over time. Agriculture is an ever-changing process in time and in space. It is like a river, in that one can never step in exactly the same river twice. Both the river and the person change in time.

Suggestions for Meeting Sampling Needs in Farm-Management Research

The practical question for farm-management research workers is how to obtain representative sample of farms for the several types of studies they have in mind, and how to get reliable data concerning these farms at a minimum cost. There appear to be two choices in the States which do not have complete annual assessors' agricultural censuses. One is to have a competent statistician develop the necessary sampling materials for the State and design a special sample for each study or group of related studies.

In the first place, the number of sampling statisticians is not sufficient to do this job for very many States and it will not be sufficient for several years. Furthermore, as this alternative would not fully capitalize on experience in sampling, schedule design, and operations, it would be unduly expensive and the results would not be satisfactory, at least for several years.

A second, and, to me a preferable choice, would be a *cooperative Federal-State program in sampling*, with the needs, facilities, financial resources, and experience of all pooled under unified direction and leadership. The college Departments of Agricultural Economics working with BAE offices and field research workers are probably in the better position to provide the leadership and direction in developing such a coordinated sampling program on a State basis. The Bureau of Agricultural Economics with its 41 State Statistical Offices and its field research workers located at Land-Grant Colleges is in a strategic position to provide the statistical core for the development and operation of an over-all sampling program on a State-by-State basis and to coordinate these programs among States.

Costs:

In a State of average size with, say five main type-of-farming areas, the cost of the annual interview survey with a minimum sample of about 4,000 farms probably would be not less than $35,000 to $45,000 annually, including the punching and machine tabulation and analysis of the data. If full use is to be made of the "Annual Master Sample" for subsequent subsampling in connection with special farm-management studies of farm income and expenses, profitable combinations of farm enterprises, profitable farm practices, input-output relationships, etc., this amount should be doubled.

At first glance, this cost seems prohibitive. But cost should be considered in relation to the value of the product. (If the value of the product is many times greater than the cost, then the higher the legitimate cost the better.) The farm-management specialists can evaluate the product of such a program. A sound sampling program would provide (a) farmers and agricultural interests generally with reliable current information concerning the changing aspects of the business side of farming and (b) workers in farm-management research with a sound scientific basis for many kinds of essential research that cannot now be done with the sampling facilities that are available.

The research worker could focus his investigations on specific problems that have evaded him in the past because he has not been able to obtain a homogeneous representative subsample of the farm population. He would be in the position of using a high-powered rifle rather than a blunderbuss. He could study the profitableness of farm enterprises in a given area, either singly or in combination, the comparative efficiency of alternative farm practices, and how size of business and the organization and operation of a given type of farm affects net returns. With the results of these basic studies he would be in better position to project the effects of proposed adjustments in farm organization and practices under varying economic conditions by means of budget analysis.

Without reliable current information concerning farming conditions and without the facilities for subsampling provided by a State annual master sample, farm-management research, extension, and teaching cannot be as effective as they should be, or shall we say must be, in the immediate years ahead when farmers will be com-

pelled by economic forces to make sharp adjustments in their farming operation. Without strong leadership and direction in farm management and agricultural economics, farmers will have no other alternative than to learn by trial and error how to use new technology and how to adjust to the rapid changes in economic conditions. Learning by trial and error can be very expensive in the uncertain years ahead, many times more expensive than the cost of an adequate and scientifically sound program in farm-management research.

In the meantime, it may be possible in some States to make a sound start in the right direction and to produce some results that would demonstrate the advantages of the more comprehensive program, that is, a pilot project.

In April 1948, the Bureau of Agricultural Economics plans to take a Nation-wide annual interview survey in the same 800 counties scattered over the United States in which the January 1947 survey was taken. The schedule will be shorter. It can be taken in 45 minutes to an hour on 90 percent or more of the farms. It will be limited to the basic characteristics of the farm. Because of lack of funds, the sample will probably be somewhat smaller than that of January 1947.

However, it would be feasible, if funds and other resources of manpower, etc. were made available in a State, to expand the size of this sample, say in only *one or two* important type-of-farming areas, distributing the sample in all the counties. Some additional "key items" could be included in the schedule if necessary, in order to provide a more adequate basis for the subsequent *selection* of *subsamples* for specific, sharply defined, studies of an intensive nature.

The minimum number of farms in almost any type-of-farming area probably would be, as stated previously, not less than 800. The marginal cost of expanding the sample in one type-of-farming area probably would not exceed $6,000 to $7,000. The "out-of-pocket" costs might be somewhat less, depending upon the extent that personnel already employed could be used for supervision and interviewing, and the extent to which State-owned cars could be utilized to reduce travel costs.

I would be glad to explore the possibilities of such a cooperative project, either on a type-of-farming area, or on a State-wide basis, with any one who may be interested.

THE ROLE OF MODERN STATISTICS IN ANALYZING FARM MANAGEMENT DATA*

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THE purposes of this paper are: (1) to discuss briefly the relationship of statistics to quantitative scientific research, (2) to outline some of the uses of statistics in farm management research, and (3) to list and discuss some of the arguments given for not using modern statistical methods in collecting and interpreting farm management data.

Many writers, including some who have written textbooks on statistics, have confused the discussion of the use of statistical methods by classifying statistics as a method of research on the level with experimentation and other methods. On the contrary statistics is a tool which is used in all quantitative research. It is true, of course, that the statistical methods used may be simple or complex; they may be efficient or inefficient and they may give biassed or unbiassed estimates, tests, or predictions. At the minimum, data are usually summarized by averages of one sort or another. These averages are statistics and are estimates of some population values or parameters. Since the data are usually based on samples, these estimates have a sampling error. In other words, the estimates would vary from sample to sample.

Appropriate statistical methods for analyzing farm management data cannot be discussed intelligently without considering the objectives of a study, the specific hypotheses to be tested and the sources of data. Statistics can make an important contribution to the success of a research study in the planning stage. A majority of the studies that end in disappointment failed in their conception and design. Other studies fail because of improper analysis and interpretation of the data obtained, but these are relatively few in number compared to the former.

The main steps in scientific quantitative research might be classified as follows:

1. The selection of a problem. Certainly one does not wish to select a problem of little or no interest, or one that has been solved previously. The success at this point depends upon one's knowledge

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

and depth of understanding of his subject, and statistics has little if anything to contribute.

2. The construction of theoretical models or solutions. This step is most important and is too frequently neglected. Without a theoretical solution it is improbable that one will be found in reality. Next the theoretical variables or quantities in our theoretical solution must be identified with actual or "real" variables that can be identified and measured. The model then becomes an a priori hypothesis about reality. The object of the experiment or survey is to test the model, theory, or hypothesis, these terms being interchangeable, with actual data. Furthermore one must decide in advance upon what bases the hypotheses are to be accepted or rejected. The construction of a worthwhile model depends upon one's technical equipment, imagination, knowledge, and experience. Statistics is one of the tools in the chest of technical equipment. This tool is an aid in setting up the model so that it can be tested objectively and efficiently. It is fruitless to continue with the study if appropriate research procedures and statistical tools are not available for testing the model.

3. The planning of a procedure for obtaining the necessary data. In this step the different methods for obtaining the data necessary for testing the hypothesis are considered. The advantages and disadvantages of the methods should be weighed carefully against one another. In selecting the method, one must consider the hypotheses chosen and the efficiency—amount of information per dollar invested. At the same time the statistical analysis to be used should be outlined in sufficient detail to see whether or not it is appropriate for testing the hypotheses. The statistician can be helpful in selecting an efficient sampling or experimental design, in checking to see if the data to be obtained will give unbiassed estimates necessary to test the hypotheses and in checking and selecting unbiassed and efficient statistical tools to be used.

4. The analysis and interpretation of the data. The statistical analysis follows directly from steps 2 and 3; however, certain precautions are necessary. Unforeseen difficulties or accidents may have occurred so that certain data are missing. Therefore the statistical model set up may not be appropriate without estimating the missing values or making some change in the model. Also before beginning elaborate statistical analyses, the success of the experiment or sample survey and the resulting data should be studied in considerable detail.

The Use of Statistics in Farm Management Research

As has been indicated already, statistics can be of most service to farm management research, involving quantitative data, in the planning of the study. Too many research workers consult a statistician, if at all, after the study has been planned, after the data are obtained and after they have experienced considerable difficulty in interpreting the data. Then they hope that the statistician might by some "magic" find something worthwhile in the data.

Statistical analysis can extract no information from data except that which was originally put into the data, The method of analysis should have been decided in the planning of the study and not after the data are obtained. Specific hypotheses should have been selected and a procedure so followed in collecting the data that the method of analysis selected is appropriate.

Frequently in farm management research the hypotheses if stated at all have been too general and vague. For example, many studies have been made to discover the factors that influence the net income on farms. Data that might be related to income have been obtained on as many factors as possible on as many farms as possible. Averages are then computed for one tabulation and then another and another. Regressions of one type and another are computed with one set of variables and then another. Such a procedure is "blind" empirical research and is inefficient, though some useful information may be obtained. Studies of this type are the ones that are likely to end with regression coefficients or other statistics that make no economic sense, and could be avoided to a large extent if appropriate hypotheses were constructed in advance. The only important place for the above procedure is to aid in setting up realistic hypotheses for future studies for which little if any empirical information is available.

The most direct method for testing a hypothesis is the experimental method, which has been considered to be, in general, not easily adaptable to research in the social sciences. Some argue that the costs and difficulties of using this method are too great to warrant its use. On the other hand, several writers including H. R. Tolley and M. L. Wilson state that many promising hypotheses concerning possible improvements in farm organization and operation have been formulated which could be tested only by the experimental method. Further they argue that with sufficient foresight and effort the method would be feasible in a number of cases.

Certainly one important body of data needed by economists comes from technical agriculture. Data are required on the effects of different crop rotations, of different rations and rates of feeding livestock, of fertilizers, of different pasture management practices and so on. Such data can be and are obtained most efficiently by the experimental method. Unfortunately the technical research workers have not in a large number of cases designed their experiments to supply the data needed by economists for a thorough economic analysis. Close collaboration is needed between the specialists in farm management and the specialist in technical agriculture in conducting the necessary experiments.

The economist has frequently tried to solve such problems by analyzing farm records. The results of such analyses are usually disappointing because of the large variability in the data. A few well designed and controlled experiments where feasible may give more information than thousands of farm records and at considerably less cost. Quantity of data is seldom a wise substitute for quality. Suppose that we wished to find the effect of crop rotations on the yield of corn from a sample survey of farms. We compute the average yield of corn following rotations A, B, C, etc. Certainly the differences among these averages cannot be attributed to the rotation alone. They are due to many factors. We next try to isolate and measure the effects of these other factors. If we have sufficient records and patience, this can be done, but we will find that our estimates of these effects will have large sampling errors. The proper statistical analysis for tests of significance and measures of reliability is complicated and costly because of unequal and disproportionate frequencies. Some people seem to believe that the effects of factors other than rotation on the yield of corn will "balance out" if a large number of records is available. This simply is not so. These other factors usually cause us to obtain biassed estimates of the effects of rotations, and no number of farms, regardless how large, will give us unbiassed estimates. These biases result from such factors as one rotation appearing on one soil type more often than on another.

We might wish to find the cost of operating home freezers on farms and the factors that influence the cost. Suppose that we place a meter on every home freezer in say a state to measure the consumption of electricity and that we obtained such information as size and type of freezer, inside and outside temperatures, type and quantity of food frozen in the freezer and the frequency of

opening the freezer. One would obtain an accurate estimate on the cost of operating a freezer but would learn very little about the factors that affect the cost. Again, a few properly designed experiments would yield much more information at less cost.

The authors do not wish to overemphasize the use of the experimental method because there are many areas of research in which its application is difficult and would require some original thinking and in others it is impossible. More use, however, should be made of the method in spite of the difficulties. There appears to be no valid reasons why a sample of farms could not be selected on which two or three methods of farm organization could be tested. There are such problems as guaranteeing that the farmers will suffer no loss as a result of their participation in the plan, but these problems could at least in some cases be overcome.

Farm management data are usually obtained from sample surveys. In most cases a sample gives more information per dollar invested than does complete enumeration of a population. The role of sampling in farm management research has been discussed by Mr. C. F. Sarle so only a few brief comments will be made on the subject.

Data in farm management almost always are a sample of some population, or universe. The data are a sample in space, in time or in both. Even if all the farms in a given county are enumerated and the conclusions reached are restricted to that county, which usually is not the case, one has a sample in time. Therefore the estimates made from the data are subject to sampling errors. Of course, one may not wish to make generalizations even about this particular county; then the problem is one of description and has no place in a research program.

Knowledge of how to select samples to estimate population characteristics more efficiently has increased rapidly during the past 10 years. More research is needed, however, on sampling methods for measuring relationships and testing specific hypothesis. Even in this area of sampling our ability exceeds that for constructing useful hypotheses, for deciding how to test these hypotheses, and for analyzing and interpreting data.

Objections Given to Modern Statistical Analysis

Numerous reasons can be found in the literature to suggest that statistical procedures more complex than simple averages or possibly free-hand regressions are not applicable or appropriate in

most farm management research. Briefly some of the reasons, followed with discussions by the authors, that have been given are these:

1. Statistical analysis does not apply since each farm is a self-contained entity and statistics are not adapted to individual cases. Too, the operator is not concerned with statistics since his decisions must be made by deciding between alternatives in consideration of his particular farm as a whole.

If the meaning of the above argument is that to be of most help to an individual farm operator one must get a detailed cost-account record of his farm and then, based on present knowledge of efficient farm management practices, advise him how to increase his net income, there obviously is not much need for statistical analysis. This, of course, is not research but extension work, and serves a most useful purpose. If on the other hand, data on one or more farms are obtained to discover, for example, the effect of various inputs on production, the results to be used on the particular farms studied and on other farms as well, then statistical methods are appropriate. One has a sample either in time or space or both.

2. The use of more complex methods such as regression requires a larger sample than does the use of means in tabular analysis. With small samples regression coefficients are frequently not statistically significant.

The size of sample needed to estimate a statistic with a given degree of accuracy depends on the variability of the data under study. Furthermore, the more efficient the statistical design employed the smaller the size of sample required for a given accuracy. The main argument against the tabular method is that it is, itself, relatively inefficient; consequently a large sample is required especially when the effects of several variables on a factor are being studied. Also, the tabular method gives no basis for tests of significance or for computing fiducial limits.

3. Erroneous inferences about the nature of a relationship may be drawn simply because of the existence of a statistically significant correlation coefficient. For example, there may be a high correlation between profits and the number of grease guns per farm.

Such an argument is of course, based on an erroneous conception of correlation. A significant correlation coefficient in itself does not necessarily demonstrate cause and effect. Certainly the person who

was so unacquainted with farming and with correlation as to compute a correlation coefficient to determine whether "increasing the number of grease guns per farm will increase farm profits" would likewise "prove" the same thing if tabular analysis were used.

4. Much of the work of farm management research has the purpose of illustrating facts and principles that are already known. Detailed statistical analysis is unnecessary in such instances.

The mere demonstration of known facts and principles is not scientific research. If one is reasonably certain that efficiency of the use of labor is directly related to farm income, it hardly seems necessary to demonstrate this principle over and over again.

5. The terminology of the more complex statistical methods is difficult for farmers to understand.

It is not necessary nor is it desirable to use technical terms when writing the results of research for the nontechnical reader. Research methodology and presentation of the results are two distinct problems. Few farmers would understand a statement that the interaction between the rate of fertilizer and the rate of seeding on the yield of corn was 10 bushels per acre. Yet most would understand an alternative statement that the application of fertilizer on plots seeded at the rate of 10,000 kernels per acre increased the yield of corn 15 bushels per acre whereas the application of fertilizer on plots seeded at the rate of 8,000 kernels per acre increased the yield only 5 bushels.

6. Statistical methods such as regression, covariance and analysis of variance do not possess the simplicity of computation that is inherent in simple averages and cross tabulation. Therefore, the easier methods result in savings of time and funds.

In any scientific study of quantitative data, the method of analysis should supply estimates of the accuracy of the predictions and conclusions made. This can be done at a lower cost by using the most efficient methods available, whether they be simple or complex. It costs considerably less to estimate a regression coefficient within a given degree of accuracy by using the method of least squares than by cross tabulation. Many studies that cost very little in terms of funds and time are very expensive in terms of the amount of information obtained.

7. Complex statistical methods may camouflage basic weaknesses in the data or in the analysis and interpretation since some people have a

tendency to assume that "everything underneath the cloak of technical terminology and complex analysis must be in order."

There are two aspects in the above argument. The first is that of academic integrity. The person who possesses the professional dishonesty to deliberately "cover up" weaknesses through complex analysis is the same individual who would "manufacture" figures to fill out the cells of a two-way table. As to the reader, he should scrutinize all aspects of a study before accepting the conclusions drawn. If he is in doubt as to the appropriateness of the statistical methods used, a qualified statistician should be consulted.

8. If farm management students published only those differences or regression coefficients that are significant say at the 5 per cent level of probability or less, then few results would be published.

Certainly one should not want to publish conclusions based on results that may merely be due to sampling or experimental error and not real effects in the population. As has been stated earlier in this paper, the economist is usually confronted with many factors that influence, say net income on a farm. These factors are extremely variable and their interrelationships are extremely complex. Also, it is agreed that considerably more work needs to be done by statisticians, preferably in close cooperation with economists, to develop more efficient statistical tools for analyzing such data. At the same time, the economists need to give serious and intelligent thought to constructing more useful and realistic economic models and to devising means for measuring the factors in these models more accurately. Progressive research in farm management methodology is almost non-existent, so far as the authors know. Too much time is spent collecting data and wishing that we had more, and too little time on deciding what data should be collected, how they should be collected and what should be done with them after they are collected. When dealing with complicated relationships involving many factors, there is all the more reason for using as efficient statistical tools as are available rather than less efficient tools. Suppose we took a sample survey of farms to find what factors affect the acceptance of new research findings by farmers in operating their farms. We set up a hypothesis and obtain the data necessary for testing the hypothesis. After analyzing the data appropriately, we find the factors being considered explain only a small proportion of the variability in the acceptance of new ideas or

that our sampling errors are too large to judge the regressions significant or both. Certainly we make no scientific progress if we say that we will ignore the tests of significance because there were some relationships, because our data are extremely variable and because we are almost certain that the factors being considered must be important. In addition, we might say that if we had data on more farms, then the variability in the data might cancel out. Instead we should reconsider our hypothesis and other possible hypotheses. Also, we should reexamine our method for obtaining the data and consider other methods. Data on more farms may merely further complicate the problem. Quantity of data is no substitute for quality.

9. Variables in farm management data are interrelated or have joint effects, say on income. Regression analysis which holds one independent variable constant while allowing variation in another but closely related independent variable deviates from reality and may result in erroneous conclusions.

The above argument is true, but any method of analysis may lead to erroneous conclusions if used incorrectly. Regressions that make no sense are not the fault of statistics in itself. In first place the hypotheses to be tested should be reasonable, as has been emphasized several times. In the second place only those statistical models, such as regression equations, that adequately express the hypotheses should be used. Here again, if the research worker is not adequately trained in statistics, he should consult a statistician before choosing a particular method or form of analysis.

STATE INDEX NUMBERS OF AGRICULTURAL PRICES*

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MOST of the states now have indexes of prices received by farmers for agricultural products computed by some agency in those states. The reasons for these indexes are fairly obvious. Agriculture varies greatly from area to area throughout the country, and an index which portrayed price changes in New York would be inaccurate for say Alabama and California. Moreover, the U. S. Department of Agriculture has provided readily accessible raw material in the form of prices and quantities. The task of construction has become fairly easy, one might almost say an index makers paradise. A recent request for information to the Land-Grant Colleges regarding their index number activity left only eleven states in which we have no record of work in this regard by either the land-grant college or the state statistician.

The majority of the state index number work has been done thus far by the land-grant colleges in the particular state. At least 29 states have at one time or another constructed index numbers for their state. Much of this work first appeared in the late 1920's or early 1930's. During the war depleted staffs resulted in several states dropping the computation of their index. Recently the state agricultural statisticians have come into the field, and in at least 8 states publish indexes where the colleges have not provided one. There is considerable merit to the notion that the state statisticians should prepare the state indexes of agricultural prices if they can be induced to do so. After all, a department of agricultural economics is simply combining the state statisticians material on prices and weights. The index also is a matter of continuous reporting which the state statistician might well provide.

The literature on index numbers is voluminous and authorities differ violently on many points. These controversies largely relate to the formula for the index. What seem to me major problems, in the sense of producing large differences between the indexes, are largely untouched. The latter are the problems of when and how to introduce a new commodity into the index, and what to do about

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changes in the quality of an item going under the same name. These problems become particularly acute in the preparation of indexes of the cost of things bought by farmers.

There are only two types of indexes that rank as of first importance in the field of agricultural prices. These are the weighted aggregate with base period weights $\Sigma P_1Q_0/\Sigma P_0Q_0$ the Laspeyres index and the so-called "Fisher ideal"

$$\sqrt{\frac{\Sigma P_1Q_0}{\Sigma P_0Q_0}\times\frac{\Sigma P_1Q_1}{\Sigma P_0Q_1}}$$

The weighted average of relatives with base period values as weights

$$\frac{\frac{\Sigma P_1}{\Sigma P_0}(P_0Q_0)}{\Sigma P_0Q_0}$$

reduces to the Laspeyres formula when the same data are used in both indexes. Under certain circumstances this latter has advantages as when certain prices fluctuate closely with others and the value weights are known for the groups in the index. It is used, for example, by the Bureau of Labor Statistics in its Consumers' Price Index. Prices of clothing for children have been found to fluctuate closely with prices of clothing of adults of the same sex. Hence it is only necessary to price the clothing of adults, and weight this relative by total clothing expenditures by that sex. Fortunately we have adequate data and do not need to resort to the weighted average of relatives for these reasons.

The weighted aggregative has the advantage of ready understandability. It compares the value of a specified assortment of goods at one period of time with the value of an identical assortment at another period of time. This is a perfectly intelligible sort of a comparison. The only problem is whether there is any sense in making it. It seems axiomatic that an index number must measure magnitudes of the same thing at different times or places. Thus we may measure such things as the returns from our given wagon load of products at different periods of time, or the costs of a given quantity of satisfaction for an individual of unchanged tastes, or

the area required to produce a specified volume of agricultural commodities. One cannot compare, for example, the farm prices of Turkey and the United States, except for commodities which are similar, and even then extensive adjustments for the value of currency and so on would be necessary.

The case for the "ideal" formula is somewhat more complex but has merit when the problem is that of breaking values into the component elements of prices and quantities. Changes in the value of marketings from one period to another are due to changes in the quantities sold and to changes in the prices of goods sold. The ratio of values of a single commodity between two periods is equivalent to the product of the price ratio between the periods and the quantity ratio between the periods for that commodity. This holds true for each of the commodities in the group. Hence it is argued that the indexes of price and quantity should be such as to meet this requirement. Indexes constructed on the basis of the "ideal" formula will do this.

The difficulties in the construction of an index of the "ideal" form are much greater than those of the weighted aggregative with base year weights. The problem is essentially that of the weights. When a large number of commodities enter into the index, it becomes a laborious task to assemble the current weights. For some of the commodities there may be a lack of statistics from which to derive quantities which necessitate estimates by dubious if not questionable methods. When reliable statistics do become available, they are generally so late in appearing that they are not available for use until the time of maximum usefulness of the index is well past. If an index is to be kept current, some sort of a preliminary index must serve until the final weights become available. This will usually be the aggregative with base period weights.

Fortunately, the differences between the "ideal" and the weighted aggregate with base period weights is not likely to be large in most situations. Note that the first part of the "ideal" formula is the Laspeyres index itself. In order for a large difference to develop it would be necessary for the latter part of the formula to differ greatly from the first. Since the prices in both parts of the formula are identical, a very large change in quantities would have to occur. One may easily argue that the change would have to be so great as to raise questions of the validity of any index comparison between the periods. Some years ago we compared our

preliminary Minnesota Farm Price Index computed as a weighted aggregate with the final index computed as a Fisher ideal over a 312 month period. The differences in the indexes in the corresponding months averaged only 1.2 percent and in 62 percent of the months the differences were less than 1 percent. This was a rather severe test. The period was one of extreme fluctuations in the general price level. The quantity weights were characterized by pronounced shifts from the base period, and finally the month to month seasonal rates of marketing varied considerably. The small differences in these indexes led us to drop the final or Fisher "ideal" index as an unwarranted expenditure of effort.

The monthly state price indexes now computed seem to be entirely of the weighted aggregate type. The quantity weights usually represent an average of the sales of several years in the period of the 1920's although at least five states are using 1935–39 average quantities. The base period for the prices and hence the index is usually 1910 to 1914 with only six states basing their index on another period. Some states use the "ideal" formula on an annual basis for examining the influence which prices and quantities have exerted on the state farm sales.

Selection of a weighted aggregative type of index does not, however, exhaust the problems of a monthly price index. There remains a very annoying question of whether the weights for each month should be similar or whether they should vary according to estimated marketings at that particular time of the year. Logic seems to favor variable weights through the year. High prices for flax in midsummer mean little to the farmer since he has little to sell at that time. A change of ten cents in butterfat prices in May or June means much more than a similar change in November. It would thus appear that different monthly weights would be proper. This, however, raises difficulties with the important chronological month to month comparison. If we return to the basic notion that the index can measure only the difference in the same thing at different periods, the situation becomes clear. We compare the level of prices in the given month with the level of prices in the corresponding period in the base period for a specified quantity of goods. When we move to the next month we price not the same quantities but different ones, and our comparison can only properly be made with the corresponding month in the base period. This is likely to show up in practice in an embarrassing way when the indexes for

successive months are compared. The indexes will show erratic movements as the weights change between months, and these erratic movements are likely to increase with the passage of time from the base period. In Minnesota there are heavy fall marketings of crops. In periods when crop prices are low relative to other prices as compared with the base period, our corresponding month weighted index drops in the heavy crop marketing months even though actual prices have remained exactly the same as in the preceding months when crop marketings were smaller. If we are thinking of farm operations, prices are actually lower as our index indicates because the farmer is selling a larger quantity of the products which are relatively low in price. The ordinary man of on the street is, however, unable to understand a decline in an index when actual prices have remained unchanged, and is likely to suspect the index. There seems to be no way to resolve this difficulty but to compute another index which compares month to month changes. We have done this at Minnesota on the basis of the "ideal" formula, and when we compare prices with the preceding month we use this index for comparison. In the 48 months from August 1942 to July 1946 the month to month index changed on the average by 1.8 points while the changes in the index based on the corresponding months in the base period averaged 4.7 points, nearly three times as wide a fluctuation.

There seem to be only a few states in which the monthly indexes are computed on the basis of differing quantity weights by periods of the year. Nearly all use the entire period of years from which quantities are drawn.

A minor problem arises in the case of monthly price indexes in deriving the annual index. If the monthly weights are constant throughout the year, then a simple average of the index will give the same results as an annual index of the simple average prices of the commodities. If, however, weighed average annual prices of the individual commodities for the particular year are used in the annual index, and this seems more logical, then the annual index will differ somewhat from the simple average of the monthly indexes. The same difficulty arises with indexes using different monthly weights. Neither a simple average, nor an average with weights for the months in their proportion to the total annual sales will give the same results as annual weighted averages of individual commodities and annual marketings. There is evidently a lack of con-

sistency between the preparation of our monthly indexes and our annual figures.

The difficulties do not stop here. When one turns to the income, price and quantity data published annually by the Bureau of Agricultural Economics, one finds important differences between the monthly average prices given in Agricultural Prices and those used in the Income reports. This means that one ends up with two sets of annual indexes, one derived from the monthly data of prices received by farmers and another of that derived from the income reports. It would be desirable to have these series strictly comparable but this seems impossible at the moment.

The individual agricultural prices themselves have considerable seasonal variation. There is thus the question of whether to attempt to make any sort of a correction for this, or to permit it to remain in the index. Where the prices for the base period are averages for the entire base period, say 60 months, then, of course, any average seasonal movement there may be in the prices as a group appears in the index. Thus if prices in the various months in the base and given period are identical in fluctuation, the index constructed on this basis would show a seasonal variation in that year. Use of corresponding month average prices in the base and given period will, of course, remove the average base period seasonal price movement from the index.

The field of state indexes of agricultural prices received by farmers appears to be pretty adequately covered. There are, however, some other lines of agricultural price index work which warrant expansion. If state indexes are desirable for prices received by farmers because of the diversity of agriculture among the different states, this is even more true of state indexes of the costs of things bought by farmers. Little work has been done along this line, but it is badly needed. The problems here are much more complex than are involved in prices received and would gain by the experimentation and thought that would be given to them by workers undertaking them at a variety of places. The data necessary are not as well asssembled as those for prices received, and much more can be done on a local basis in finding how various essential series may be assembled and the different elements in the index number handled. The early work in this field may well be done by the states themselves, and as the importance and desirable techniques are evolved, this phase of work might well pass to the state statisticians

or be supplemented by them as has been the case with the indexes of prices received. The results from the preparation of a number of state indexes might have a very salutary effect upon some of our ideas regarding parity prices and parity incomes. They would emphasize the diversity of conditions under which agriculture is carried on and lead to a better understanding of the agricultural situation.

Another direction in which agricultural indexes might profitably be extended is toward the changes in costs of certain of the important agricultural enterprises. The limitations of agricultural cost data and the difficulties of estimate and assembly are well known. If, however, we are going to know about the changing agricultural situation, cost indexes as well as prices received, indexes seem desirable. A considerable number of states compute indexes relative to the dairy enterprise. These are likely, however, to be in terms of the cost of the dairy ration, rather than a coverage of all costs in the dairy enterprise. This is likewise true of our hog-corn ratios, egg-feed ratios and so on. If we are going to know more about the fluctuations in costs, we must have more than this. A liaison between farm management workers and index number workers would be useful in developing this field.

It should be evident that although we have reached considerable standardization of procedure and fairly wide coverage in our state indexes of prices received by farmers, there are other directions in which price index number development may be pushed. Most of the indexes of whatever sort that are computed for the United States may also be prepared upon a state basis. This is in no sense simple duplication of efforts elsewhere since it serves to emphasize the variations in agriculture throughout the country. Most of the public, and perhaps even ourselves, are inclined to look at the national indexes and think of them as characterizing all of agriculture. The variations also deserve attention.

SOME STATISTICAL PROBLEMS INVOLVED IN TYPES OF FARM INCOME, BY SIZE*

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IN accepting this assignment to present some materials on the problems of preparing size distributions of farm income, I had hoped to report to you some of the fruits of the Enumerative Survey of Agriculture conducted last January, which dealt with the incomes and production expenditures of farm operators in 1946. But the mill of statistics grinds slowly and although some of the basic tabulations have been received, they have not yet been evaluated, except in a preliminary way. Consequently, this talk will discuss in very general terms the data that we shall have and what we expect to do with them.

A year ago, the Bureau of Agricultural Economics, in cooperation with other government agencies—the Office of Business Economics, the Bureau of Labor Statistics, the Bureau of the Census, and the Bureau of the Budget—initiated a project to construct the size distributions of incomes in the United States for the calendar years 1944 through 1946. The only previous Nation-wide income distributions available were those for 1935–36 from the Study of Consumer Purchases, and for 1941 and the first quarter of 1942 from the Survey of Spending and Saving in Wartime. The former study was based on 300,000 schedules, with 25,000 representing the farm sector, and the latter on only 3,100 schedules, of which 760 were rural-farm. The marked increases in incomes during and following World War II to levels never previously realized have brought new emphasis and pressures to find out how these record incomes were distributed.

For 3 years, the Bureau of the Census has surveyed the money incomes of families. These surveys were conducted in May 1946, and in April 1946 and 1947. They covered the incomes received during the calendar years 1944, 1945, and 1946. The size of the sample was increased from 6,700 households for 1944 to 8,700 for 1945 and to 60,000 for 1946. The size of the farm sample was 950, 1,500 and 4,200 respectively. For the year 1946, the survey was a cooperative undertaking, with the Bureau of Agricultural Economics con-

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ducting the income survey of farm-operator households as part of its January 1947 Enumerative Survey of Agriculture. These are the principal basic survey data with which the Interdepartmental Committee will deal in constructing size distributions for recent years, adjusted for those biases that can be accounted for. The division of labor within the Committee was based on the particular interest of the agency involved. The BAE is responsible for preparing the distributions which relate to the farm population, the BLS for nonfarm wage and salary earners, and the Office of Business Economics for the distributions that relate to nonfarm business entrepreneurs and to family units without employed members. This is a brief outline of the project.

Budgetary difficulties have made for some retrenchment with respect to the details that it was hoped could be presented. It is hoped that this will not be fatal. The Bureau of Agricultural Economics has particular interest in these size distributions for several reasons. (1) The shortcomings of the income-parity formula, now on the legislative books as a means of reflecting the well-being of the farm group relative to the nonfarm group, are well known. They have received considerable attention in the JOURNAL as well as elsewhere. It was thought that an analysis of size distribution of incomes of those engaged in farming compared with the distribution of incomes of nonfarm groups, in considerable detail and with attention to differences in price levels between groups, would lead to a better measure of relative well-being than is now at hand. (2) In analyzing the demand for farm products, along with a determination of the level of income, it is important to know how the income is distributed. Increments of income at different levels of the income size distribution are reflected in varying demands.

The Concept of Income

With these two points of interest, what kinds of income distributions are appropriate? What concepts of farm income should be adopted? Obviously, if the major use of the distributions is to compare the economic return to the farmer for his efforts with the returns to other population groups, income of the farm operator should include, insofar as is possible, the nonmoney income from the farm, such as the value of the foods furnished by the farm and the value of use of the farm dwelling. The income should also be adjusted for increases or decreases in the value of crop and live-

stock inventories due to physical changes in these inventories. On the other hand, if income size distributions are viewed as a factor affecting the demand for farm products, then the most useful concept of income would be represented by the money income and expenditures, in other words, the spendable income. The basic surveys previously mentioned have been carried through to obtain the money incomes of the farm population, primarily because of costs and time limitations. Consequently, we are in a better position to construct the distributions of money incomes than to construct the more comprehensive distributions required for intergroup comparisons.

However, income size distributions that represent nonmoney as well as cash incomes will not be abandoned. The 1945 Census of Agriculture has presented cross tabulations between the value of sales of farm products and the value of products produced for home consumption. The value of the occupancy of the farm dwelling can probably be roughly imputed from census data on valuation of farms and previous studies. In the January 1947 Survey, farm inventories of crops and livestock as of the beginning of 1947 were obtained so that a measure of inventory changes in the calendar year 1947 can be obtained, if it is possible to make a survey at the end of this year.

Although conceptually it appears clear that the nonmoney income from the farm should be included, it is not so clear as to how these items should be valued. The price level at which foods produced and consumed on the farm has been valued in previous studies varies from what the farmer receives for similar products to the retail price he has to pay. It makes for a considerably different size distribution depending on the choice. In 1941, nonmomey income from food, valued at retail prices to the farmer, accounted for 20 percent of the total money and nonmoney income. And this figure represents the average. In the two lowest income groups it accounted for 55 and 38 percent of the total. If the farm-furnished foods were valued at the prices the farmer received, which is approximately at half the retail level, a considerable concentration in the lower income levels would occur. In comparing the incomes of farm and nonfarm groups, the effect of the several valuations that can be imputed for farm-furnished food can perhaps best be ruled out by means of the price deflator to be used in conjunction with the income data. A proper appraisal of the economic position of

farmers relative to nonfarm groups requires, in addition to the income comparison, an evaluation of what these incomes will buy. In making adjustment of the income to account for price differences, the problem of how farm-furnished foods are evaluated can be accounted for in the price index constructed to translate the income data into "real" terms. Some exploratory work in this direction has been done. It has been the practice in the BAE to value the farm-furnished foods at the prices received by farmers, the same price used to compute cash receipts from farm marketings.

Although the concept of what should be represented in a money income distribution of farmers that is to be combined with distributions for other groups is also quite well agreed upon, the actual practice in obtaining data, particularly as to farm expenditures, makes for considerable confusion in comparing income distributions from one period of time to another. The earlier studies of 1935–36 and 1941 included the net change in inventories; they deducted as farm expenses only that part of the automobile operating costs that the respondent thought could be charged to the operation of the farm; and they also deducted as an expense an estimated depreciation charge, in addition to repairs for machinery and equipment. The more recent surveys of the Bureau of the Census do not include inventory changes; nor do they include allowance for use of automobiles for nonproduction use or depreciation charges for machinery or farm buildings. All this makes for confusion for those hardy souls who may attempt to make comparisons with the earlier years. The 1935–36 distributions are presented on a total, nonmoney and money income basis whereas the 1941 distribution is presented only on a money income basis. This does not simplify comparisons from one period to another.

Why weren't the farm-income data for the Census Surveys obtained on a similar basis with the earlier years? It seems evident that the money-income concept used in the earlier studies was more desirable than the concept implicit in the more recent studies. But limitations of time and costs per schedule imposed on the Census Surveys did not allow for the additional questions that would be required to bring the studies into comparability. Nor are the three Census surveys completely comparable among themselves. For the 1944 Income Survey, only global questions were asked relative to total money receipts and net income after expenses. For 1945, the same questions were asked, but if the respondent was unable to

reply, a break-down of income and expenditure was provided for on the back of the questionnaire. (It is interesting that the non-reporting rate was somewhat higher for the latter survey.) For 1946, which was a cooperative undertaking by the BAE and the Bureau of the Census, a detailed listing of questions on farm income and farm expenditures was used. Thus, even though conceptually the treatment of money income was about the same for these 3 years, an appraisal of the year-to-year changes in the farm-income distribution is qualified by the types of questions asked and the amount of detail requested.

Definition of the Income Unit

Another conceptual problem of large magnitude relates to defining the income unit. In the earlier studies, Consumer Purchases and Spending and Saving in Wartime, the income unit represented a spending unit, that is, the family was defined as a group of persons living together, pooling incomes, and sharing major living expenses. But this definition did not turn out to be entirely satisfactory. There was some difficulty in ascertaining the degree of pooling incomes and sharing expenses. An unfortunate byproduct of the "spending-unit" concept was the breaking off from the family of many young persons who were earning relatively small amounts. Another concept, which should probably be called a "Saving Unit" was introduced in the Federal Reserve Board Surveys of Liquid Assets early this year and last year. If a person handled his finances separately from the rest of the family, a separate unit was determined. One byproduct of this definition was that some wives were separated statistically from their husbands and it was necessary to edit them back into one family.

In the more recent Census Surveys, the income unit has been defined to contain all persons living in the household who are related by blood, marriage, or adoption. This definition lessens the possibility of different interpretation as to what the income unit contains but is open to the criticism that it contains too much. The housing shortage is reflected by many doubled-up families. According to the definition based on blood, marriage, or adoption, most of these doubled-up families are integrated with the parental group. Yet the income and expenditures are not integrated.

What is the effect of shifting the income unit from a spending unit to a family-relationship unit? Some recent tabulations by the Fed-

eral Reserve Board based on both concepts yields the following for 1945: (1) The number of income units is reduced from 46 million spending units to 40 million families and single individuals; (2) the average income per unit is 15 percent greater for the family unit than for the spending unit; and (3) the concentration in the lower income classes is somewhat less for the family unit as the incomes of 6 million spending units are integrated in the family units. However, when a Lorenz type of distribution is considered, the proportion of aggregate income in each decile is practically unchanged.

Population experts in the Bureau of the Census have been thinking about a new approach for defining the unit so as to exclude from the primary family group, such secondary family groups as a son or daughter with spouse, or a parent-child combination. These would be considered as separate family groups. However, the Bureau of the Census is not considering an income survey next year and by the time a new one is indicated, the problem of doubled-up families may have been largely resolved. Therefore, the emphasis on this approach may be dissipated.

Biases in Constructing Farm Income Size Distributions

Up to this point, this discussion has been concerned with conceptual difficulties and how they may affect size distributions of income. Let us consider now the biases that develop in a survey of farm incomes. First, there is the bias of an imperfect sample. It is true that great strides have been made in sampling techniques, but the distance is still considerable from a level of efficiency whereby it can be assumed that the population is adequately represented. In the January 1947 Enumerative Survey of Agriculture, the sample was drawn up on the basis of the number of farms reported in the 1945 Census of Agriculture—5,860,000 farms. But, in expanding the sample, the estimate of total number of farms in the United States was 495,000 less than the expected number. Are we to assume that there were 8 percent fewer farms at the beginning of 1947 than 2 years previous? There is little other evidence of a significant change in the number of farms, but there is some indication that the smaller sized farms were underenumerated; practically all of the difference between the survey results and the Census can be accounted for by farms under 50 acres in size. This leads obviously to some adjustment in the lower sections of the size distribution of gross cash farm income.

Underenumeration of this sort is unfortunately common in sample surveys. In the 1944 Census survey of consumer incomes, only 4,575,000 families with farm income (including loss as well as profit) were identified, compared with an estimated 5,200,000 farm families. Some families have more than one farm operator, and this largely accounts for the difference of 660,000 from the 5,860,000 farms reported in the Census of Agriculture.

Another bias arises because of absences from the home at the time of survey or because of refusal to give information. In the January Survey, no information was obtained from approximately 15 percent of the farms in the sample. About half of these were not at home or were otherwise unavailable. Actual refusals to give any information amounted to about 8 percent of the noninterviews, or less than 2 percent of the total sample. Very little is known of these nonreporting farms, and we have practically no information as to where they are in the income scale. How are they to be distributed according to income levels? In some studies, it has been assumed that these nonreporting units were distributed in the same manner as were the units that reported. However, in dealing with income and expenditure data, such an assumption is unsafe. Nonreporting income units tend to be in the higher income brackets. These families take trips more frequently and have a higher absentee rate. Also, they are generally more reluctant to give information on incomes, as they fear reprisal for income-tax evasions. In the 1941 Study of Spending and Saving, information was obtained relative to the value of lands and buildings on farms where information was refused. Substitutions were made on this basis and the distribution was corrected. The bias of nonreporting is a serious problem, inasmuch as in most surveys that have been conducted, the nonreporting rate has been about 15 percent of the total sample.

Underreporting of income also tends to obscure the true size distribution of income. Primary survey data, even after adjustment for underenumeration and nonreporting, do not measure up to the totals that have been established through other sources. Consistently, total incomes, as reported in surveys, were at least and usually more than 10 percent below the aggregate estimated by the Department of Commerce. Although the aggregates computed are also subject to some error, for most components of income they appear to represent a reasonable checking point. Surveys do not turn up anywhere near a reasonable total for Dividends and In-

terest. In general, wages and salaries are well reported in total. The wage-earner, if regularly employed, knows fairly well his earnings over a year. There is little reluctance to hold back this information as taxes have already been deducted. In the case of farm income, underreporting of income becomes acute. First, it is more difficult to arrive at a correct income figure. Some sales of farm products are likely to be forgotten. Production expenditures are probably better remembered, but the dividing line between some production and living expenditures is vague. Thus, the underreporting of gross income from farming is probably less than the underreporting of net income. The total value of sales obtained in the 1945 Census of Agriculture for the year 1944 was approximately 20 percent less than the total estimated by the Bureau of Agricultural Economics. An estimate of the net cash income from farming obtained in the 1944 Survey of Income, after adjustment for underenumeration of farm families, is close to 30 percent below the comparable BAE estimate.

Some of the principal aids for adjusting income distributions are not available or are relatively meaningless for the farm group. Income-tax data which are valuable for adjusting the upper end of the income distributions are not particularly pertinent to the farm group. The legal concept of income from farming is vague, and the inability and reluctance to check farm incomes make income-tax data of little use when applied to farmers. There is some evidence that as late as 1943, less than half the farm families who should have filed returns did file. Also, farmers are not covered under the Social Security System, which provides some assistance in adjusting income distributions relating to wage earners.

Experience with Size Distribution of Gross Farm Income

Probably the most familiar size distribution of income relating to the farm group is that of the value of products sold, traded, or used, presented in the Census of Agriculture every 5 years. Even though the Census attempts to obtain full coverage, there may be a problem of underenumeration, as differences in the enumerators' interpretation of what is a farm affects the number of farms recorded. But such underenumeration is of minor importance when contrasted with underenumeration which results from an inadequate sample. Nor is the problem of nonreporting significant. In the 1945 Census of Agriculture, information relative to the value of

products sold, traded, or used was not obtained from less than two-tenths of one percent of all farms.

However, underreporting of the value of products is undoubtedly significant. For the year 1944, the total value of products sold, as reported in the Census, was approximately 20 percent below the BAE estimate of cash income from farm marketings. A comparison of the Census of Agriculture data on value of products sold for 1944 with data on gross cash farm income reported in the Census Survey of Consumer Income for the same year permits an appraisal of the survey techniques employed. After expanding the farm sample, 4,970,000 persons were identified as farm operators who received some gross cash farm income, compared with 5,328,000 farms reporting value of products sold. Thus, the underenumeration as compared with the Census was about 350,000 farm operators. Apparently, the underenumeration was largely concentrated in the lowest income group, and probably reflected the difficulty of enumerators in identifying small-sized farms. After adjusting for underenumeration and for the relatively small nonreporting incidence of only 3 percent of all farms, the size distributions of gross cash income and the aggregates of income are remarkably close together, considering that the farm sample was based on only 950 farm households. However, the underreporting of income of approximately 20 percent remains and the income unaccounted for has not yet been assigned to appropriate income size groups. Out of the survey conducted in January, we plan to get tabulations of the discrepancies in income for individual farm products. With this information, we may be able to close the income gap.

As has been previously mentioned, the sample used in the January 1947 Enumerative Survey of Agriculture failed to identify almost half a million farms. As yet, an estimate of the aggregate income represented in this survey is not available. Nor can we be confident that the considerably larger sample employed will yield better results than the 1944 Consumer Income Survey. Our experience is too limited to permit generalizations. But we have an additional clue as to the reasonableness of a gross income distribution. In examining the distributions of the value of products, a useful consistency is found. Changes in distributions from one censal period to another generally are proportionate through most of the income scale. This is reasonable, as changes in yields and prices are generally effective on all farms, large and small, to approxi-

mately the same degree. So it can be anticipated that the distributions of gross income will be more accurate than will be those of net income. (1) Aggregate estimates of production expenditures against which to check are less satisfactory, (2) the additional factor of production expenditures, with its attendant biases, is being introduced.

It is a matter of regret that at this time the problems that arise in constructing income size distributions cannot be discussed further but perhaps this can serve as an introduction to the forthcoming size distributions. When these distributions are constructed, the problems and shortcomings, as well as the steps taken to solve them, will be listed.

SAMPLING METHODS IN USE IN SOME OF THE FARM MANAGEMENT RESEARCH AT CORNELL*

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FROM the beginning, cost accounts and surveys have been the principal research methods in use in farm management at Cornell. Both methods have been used for at least four decades. This paper is concerned largely with the sampling methods in the surveys, but first a word will be said about cost accounts.

Cost Accounts

The main objective of cost accounts is to obtain detailed information about practically all phases of some individual farms. Perhaps the most important data are those relating to the relative profitableness of the different crops and classes of livestock in these businesses. Consequently, sampling is subjective, largely a matter of getting dirt farmers who will cooperate in keeping detailed cost accounts. The results are not representative of average farm conditions. These records are used to make case studies of individual farms, and at best to represent only the better-than-average farms.

Surveys

The objective of the farm management surveys is chiefly to determine economic relationships in farming. Block samples are usually used. Selection of the blocks is subjective.

In reporting these studies, the areas surveyed are described in considerable detail. This is done to provide the proper setting for the analytical phase of the work. The inference in such procedure is that the description applies only to that area but that the relationships found may well apply under similar conditions elsewhere.

The relationships established by such block sampling procedure have stood the tests of time and experience. Repeated studies of this type for many years and in many areas are not likely to lead to wrong conclusions. It is probable that scatter sampling would have led to about the same conclusions as the block sampling, but at considerable more cost for the field work and at considerable sacrifice in public relations.

We agree with Wilcox that objective sampling of farms is essen-

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tial for studies of efficiency relationships.[1] We disagree with his statement that "It is obvious that one cannot be sure that a few geographic blocks selected by the investigator will be such (unbiased) a sample." If as Wilcox states "Well trained and experienced research men may be able to analyze problem situations in nonquantitative terms and arrive at valid and exceeding useful conclusions even though they have no statistical proof of their conclusions," then these same well trained and experienced research men should certainly have sufficient knowledge of their state to select an unbiased block sample.

As an example of the selection of such a block sample of farms, in a recent study an area of the following characteristics was essential to meet the objectives of the project:[2] "(1) type of farming predominantly dairy; (2) land with natural productivity representative of the limestone soils of Central New York; and (3) location with respect to cities such that marketing, farm labor, and real estate values were not unduly affected." An area in Oneida County which met these qualifications was selected.

In another case—a study of type of farming adjustments in a hay and grain area—the first step was to delineate the area which had similar adjustment problems. This was done through the use of secondary data and reconnaissance field work. This preliminary work made it possible to select for intensive study a small block which was representative of the larger area.

Formerly all farms of all types within the block were enumerated for detailed study. For example, in one county in 1937, detailed records were enumerated on 253 fluid milk farms, 129 other dairy farms, 40 poultry farms, and 31 miscellaneous type farms in the area. Some kind of record of these farms was necessary to describe the area, but when it came to a study of relationships some of these variables, like type of farming, had to be eliminated. The detailed enumeration of the miscellaneous types of farms was very costly in relation to the usefulness of the data obtained.

Within most rural communities, there is an increasing intermingling of rural residences, part-time farms, family-commercial farms of various types, and large-scale farms. The enumeration of all farms within a block results in a conglomerate group of records. In our dairy studies in recent years, block samples were used, but only the farms meeting certain qualifications were enumerated,

[1] Wilcox, W. W., *Research in Economics of Farm Production*, this JOURNAL, August, 1947.

[2] L. C. Cunningham, and S. W. Warren, *Farm Management in Oneida County*, 1942–43, Cornell University Agricultural Experiment Station, Bulletin 880.

For example in the Oneida County study referred to above, only farms which met the following qualifications were enumerated: "(1) operator whose major business was farming; (2) milk sold at wholesale, major source of farm income; and (3) at least six cows." In addition, all other farms and residences were located on a map and a small amount of information concerning each was recorded, thus providing a brief inventory of the area as a whole.

The time and money available for this study used in that way yielded much more useful data than if detailed records had been obtained on every farm. Part of our objective was to describe briefly the area and to describe in detail the commercial dairy farms in the area. The main job was to study relationships. In order to provide a more adequate setting for our analytical work, we found it useful to know what other farms and residences were in the area (Table 1).

TABLE 1. FARMS AND RESIDENCES IN THE VERNON CENTER AREA OF ONEIDA COUNTY, NEW YORK, 1943

	Commercial Farms		
Dairy farms selling wholesale milk in 1942–43:			
Detailed record obtained		102	
Detailed record not obtained			
Not visited	11		
Change of operators	8		
Sickness, language difficulty, or farmer too busy	5		
Refusal	7		
		31	
Total dairy farms			133
Other commercial farms:			
Outside job and commercial dairy		8	
Cattle dealer		4	
Temporarily no dairy because barn burned		1	
Retail milk		1	
Butter		1	
Cash crops		10	
Sheep		1	
Beef cattle		1	
Total other types			27
Total commercial farms			160
	Non-Commercial Farms		
Outside job		31	
No outside job (mostly old people)		11	
Total non-commercial farms			42
	Residences		
Occupied		155	
Idle		25	
Total residences			180

As was so well brought out by Wilcox,[3] there is continuing need for up-to-date farm management data. Furthermore, we feel the established relationships need to be expressed in more quantitative terms; the shapes of the curves of relationship need to be determined more accurately; the more important variables such as land quality and size need to be eliminated so as to study more carefully some of the minor factors causing variation in farm production efficiency. Meanwhile, the demands are increasing (or are being more widely recognized) for descriptive data of wider application than those from block samples. For example, more data are needed concerning physical inputs to produce milk under different land conditions within a state or in different regions of the country.

Our block sampling method in farm management surveys in New York appears to have led to sound conclusions with respect to the analytical work. The data have been objective and unbiased. They covered nearly the whole range of farmer experience. They have lacked somewhat in making it possible to arrive at quantitative determinations of relationships. This latter limitation has been more a lack of numbers of records at the extremes of experience than of method. The method of sampling has fulfilled the major purpose of the studies.

To meet the increased demands for adequate descriptive data, secondary data are being drawn upon even more than formerly because of their increased availability. Also, the enumerative survey or sample census will be used to obtain some farm management data. As more and more data are obtained by the use of the random sample of records scattered over wide areas, experience will show to what extent the same data can be used for descriptive purposes and for analytical studies of economic relationships in farming.

[3] Wilcox, W. W., *Research in Economics of Farm Production*, this JOURNAL, August, 1947.

SAMPLING PROCEDURES USED IN STUDY OF HAYMAKING METHODS*

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I WILL describe the sampling procedures used in a study of haymaking methods. Work on this project has been carried on for three years. The specific objectives and the sampling procedures have changed from year to year.

One objective the first year (1945) was to determine labor requirements and costs for bringing hay from the windrow to storage by different methods. We were primarily interested in comparisons among loaders, field balers, field choppers, and buckrakes. A second objective, carried out in cooperation with the B.A.E., was to obtain data on labor requirements and related information for loaders which would be combined with similar data from other states to prepare a national summary of haymaking.

The data were obtained by survey. A dairy area with a fairly high proportion of alfalfa hay was selected for study. The interviewers located farmers operating field balers, field choppers, or buckrakes. The names were obtained from county agents, machinery dealers, farmers, and any other feasible source. Since the number of farmers using these machines was quite small, all of them were contacted and interviews obtained, if possible. Each interview with a farmer using one of the three machines mentioned was matched with an interview with a farmer using a loader. The first farmer to the west was selected. By this means we hoped to obtain data for loaders from farmers operating under conditions similar to those for farmers using the other three machines. We also hoped that the data for loaders would be sufficiently random to provide the basis for a reasonable estimate of labor requirements for the area. Usable records were obtained from 69 farmers—36 using loaders, 33 using other methods.

The objective for the second year was again to compare labor requirements and costs among different methods of haymaking. We wished to check the results of the first year's study. We worked in the area surrounding the counties in which we worked the previous year. None of the farmers interviewed in 1945 were contacted

* A paper presented at a round table at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 10, 1947.

again in 1946. We were again interested in the same four methods we studied in 1945.

Since we were interested primarily in comparing the different methods, it seemed desirable to secure an approximately equal number of observations for each method. That should give maximum information with a limited amount of money and time. Few buckrakes are used in the area studied, so it seemed impractical to secure a number of cases equal to the other methods.

We again located farmers using field balers or field choppers, and interviewed them. If we located and interviewed a man operating a baler in a community, we searched out the nearest farmer using a field chopper. Then we interviewed a man using a loader in the same community. We set no specific rule as the basis for selecting the men using loaders. By obtaining records for the three methods within one community we hoped to equalize types of farming and types of hay crops. We secured records for farmers using buckrakes whenever we could find one, making no effort to match it with records for the other methods. We secured 79 usable records—29 for loaders, 21 for field balers, 21 for field choppers, and 8 for buckrakes.

The results obtained in the two years were consistent with each other and with studies conducted in other states. There was, therefore, no need to carry this phase of the study further. During the third year, (1947) our objective was to determine some of the reasons for the wide variations in time expenditures among farmers using the same method, and to assemble ideas for reducing time expenditures. We selected the use of loaders as the basis for study. Since that is the method in most common use, it was easier to find an adequate number of cases without excessive travel. Those farmers have been using loaders for many years, and have standardized their operations.

The information was obtained by direct observation while the farmer was putting up hay. The data included detailed records of time spent, weights of loads, dimensions of fields, size of windrows, distance to field, dimensions of hay storage place, description of equipment and crew, and notes on any occurrences or situations that might influence labor efficiency. We usually spent an afternoon with a farmer, obtaining data for two to six loads. The analysis will be made by a detailed study of each case, and by applying the time data to standardized fields, yields, and conditions.

The area selected for study was adjacent to the experiment station, with no farmer located more than 30 miles away. Expediency played a large part in making this choice—it enabled us to work in our offices during the forenoons, and on rainy days. The types of hay, acreages of hay, types of barns, and types of equipment are reasonably similar to those over a fairly large part of the state.

We selected our farms by driving down the road looking for a farmer using a loader, and then asking permission to obtain our information. At first we stopped at any farm where a loader was in use. Later we searched for farmers using different sizes of crews or types of equipment or storing their hay in different types of barns. Unfortunately we had to limit our observations primarily to farmers pulling their wagons with tractors; it was difficult to weigh the horse drawn wagons. Judging by other observations on haymaking methods we feel we have data on a reasonably wide range of types of equipment and other conditions. The number of cases obtained was somewhat small, however,—only twelve. As an interesting sidelight, no farmer refused us permission to spend the afternoon with him.

I have tried to outline our sampling procedures briefly, but with enough detail to provide a basis for discussion. I wish to add a few ideas concerning the application of sampling to this project. I hope they will add fuel to our discussion.

It seems to me that we sometimes confuse our issues by applying the term "sampling" to studies such as this. As I listen to discussions or read articles about "sampling" they deal largely with problems of the census type; that is, the enumerator wishes to count the number of cases falling within certain categories. There are many valuable projects of this type. The second objective for the first year of the study I described requires an enumeration of this type.

The study of haymaking methods is of a different type, however. We were interested primarily in obtaining information that would help the farmer to select and adapt to his conditions the most satisfactory method of haymaking. The farmer wants to know the costs, rates of performance, and similar information for the different methods. He wants to know how these apply to his farm, but he is not concerned with the number of other farms to which they will apply. The research worker, of course, wants to know that his findings will apply to a sufficient number of farms to justify study,

but the estimate of the number of cases can be rough. For many studies the farm management worker carries in his mind sufficient information to formulate this judgement without further study.

It seems to me that for problems such as the one I have presented here, the student of experimental design may be of greater assistance than the student of sampling, although both may be needed to provide the final solution. In these problems we are attempting to determine relationships among variables. We determine these relationships by studying a series of cases, each falling at some point along our scale of variables. In order that our conclusions will be valid, we must be certain that our cases are comparable. If we select our cases correctly we may be able to measure several variables with a limited number of cases, as the agronomist does with his carefully designed field trials. Our first big problem is then to define the types of cases we wish to study; that is, define the exact universe we are studying. The next big step is to find the cases that fulfill our conditions; that may be more a problem of searching than of sampling.

In making these statements I recognize that I am wide open to criticism. If it stimulates discussion, I shall be satisfied. After all, there is merit in the slogan, "Remember the turtle, he gets nowhere unless he sticks his neck out."

ECONOMIC EVALUATION OF SOIL AND WATER CONSERVATION MEASURES AND PROGRAMS*

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DURING recent years there has been a growing recognition of the responsibility that the public should exercise in behalf of soil and water conservation. Realization of the consequences of wind and water erosion, frequency of damaging floods, and the unfolding possibilities for large-scale river-basin development have contributed to the general acceptance of public responsibility for improvement and development of land resources. Accompanying this growing interest, the need for economic evaluation as a basis for determining the appropriate scope and the most productive methods of conservation and land development gives rise to some important analytical problems. Several large development programs carry statutory and administrative provisions for benefit-cost evaluations in determining the economic justification for project investments. Likewise, the application of soil- and water-conservation measures on farm lands must be guided by an adequate knowledge of the economic effects that may accrue to the business of farming.

Economic evaluation of public and private investments in the conservation and development of land is the process by which all costs and and all benefits, to whomsoever they may accrue, are systematically and objectively compared to determine whether the benefits which are likely to result from the application of various measures and practices, at varying degrees of intensity and under different physical circumstances, will be sufficient to justify the costs thereof.

The complicacy of the job is immediately apparent. "All costs and all benefits, to whomsoever they may accrue," cover a wide territory. The range is from tangible cash costs and returns to remote and intangible effects incident to both public and private economic and social activity. The amenities enjoyed by individuals and the greater national security that may result from well-con-

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[1] Agricultural Economists, Bureau of Agricultural Economics, U. S. Department of Agriculture. The authors are solely responsible for the contents of this paper, and no parts thereof should be construed as necessarily representing Department policy.

served farm lands are difficult to evaluate in terms of the dollar denominator. The extended effects that an improvement program in one region may have on the economy of another region, and the benefits that may accrue a hundred years hence are difficult to trace and appraise. Benefits and costs which accrue over time must be converted to comparable current or annual values. The comparison of public and private costs and benefits reaches into the relatively unexplored field of social values. Even the comparatively simple task of measuring farm costs and returns incident to conservation of soil and water is far from a perfected procedure. In addition, there is constant need to consider the incremental or marginal relationships between benefits and costs in ascertaining the most productive combinations of measures and practices and the intensity to which they should be applied.

In general there are at least two reasons why techniques and procedures for making economic evaluations of this type have not been more adequately developed. *First*, adequate "physical" data have not been provided as the grist for economic analyses. This has been due to the time required for observation and experimentation, and the lack of cooperation between economists and physical scientists in providing the essential techniques for collecting and adapting the basic data that are essential to economic evaluations. *Second*, the immaturity of the whole field of social values has restricted the exploration of relationships between private and public values, and the conditions under which numerous extended effects, which are often claimed, could actually arise. The source and incidence of all effects are integral parts of the evaluation process. Inadequacy of basic data and of acceptable standards of measurement is the principal limitation that must be overcome before benefit-cost analyses can be completely dependable.

Function of Economic Evaluation

The principal functions of economic evaluation are: (1) to determine the economic feasibility of any given program, from both the public and private viewpoint; (2) to supply the basis for designing and planning the most productive combination of measures and practices, and to determine the most profitable intensity to which a program can be applied; and (3) to provide the basis for apportioning the costs of conservation between public and private interests.

In terms of national planning, objective economic evaluations of alternative improvement and development opportunities are needed as a basis for selecting the most urgent and productive types of public investment. Public funds, which are usually limited during any specific period, should be expended for those measures and programs that will produce the greatest net return. Priorities for the accomplishment of various types of conservation should be established on this basis. Certainly, it is clear that the various investment possibilities are likely to return varying degrees of benefit, whether public or private. Consequently, the choice of programs and the design of specific projects should be made on the basis of comparative economic productivity.

Farmers obviously need economic evaluations of proposed conservation measures as a basis for selecting the measures and types of programs that represent profitable investments for them. They need to know not only the character of program to apply, but the most profitable intensity with which to apply it. Moreover, to the extent that government assumes the responsibility for determining the character of a conservation program to be applied, farmers should be assisted in adapting the program to fulfill both public and private needs.

Another significant function of benefit-cost evaluation is that of providing a basis for cost allocations. When single investments are to serve two or more functions of a program, economic analyses must provide the basis for allocating the total costs among the several functions. This is of particular significance when one of the associated benefits is to be self-supporting, while another is to be subsidized as a public service. The apportionment of soil and water conservation costs, between ranchers and farmers on the one hand and the public on the other, is a practical problem of current interest.

From the farm-planning viewpoint, individual and typical farm or unit evaluations are sufficient. That is, the value of conservation to a particular farm can be ascertained by appraising the costs and benefits incident to the application of specific measures or combinations thereof. But the evaluation of soil and water conservation as a basis for guiding legislation and for allocating joint program costs between public and private interests demands regional or possibly national estimates. Thus, the scope of the evaluation job varies from the more or less tangible considerations that are involved in

farm-business analyses to the full range of social and private effects that constitute the public-welfare aspects of soil and water conservation on an area or national basis.

It may not be possible to develop techniques and procedures that will measure accurately *all* the cost-benefit effects of a land-improvement and conservation program. Some of the effects may not be commensurable in terms of any objective or standard unit of value that can be conceived. Numerous qualitative appraisals may be unavoidably a part of the evaluation procedure when it is desirable to consider the full range of tangible and intangible effects. Nevertheless, the fact remains that these effects should be evaluated. Thus, it is imperative that the best possible methods be devised for appraising both the quantitative and qualitative character of the benefits and costs that may be associated with investments in the conservation of soil and water.

Identification of Benefits and Costs

Going back to the definition of economic evaluation, as applied to conservation, it may be recalled that it is a process by which all costs and all benefits are objectively compared. These costs and benefits might be called economic effects, since the intention is to include all effects of the application of investment and other expenditures, and the resulting impacts from all the economic activity that is set in motion. These effects, in turn, become the attributes of conservation that we wish to measure and evaluate.

Before it is possible to measure effects, the practice or program in question must be accurately identified and delineated. This raises the question: What is soil and water conservation? Briefly, it may be assumed that, from the physical standpoint, soil and water conservation is an engineering, agronomic, cultural, or vegetative measure or practice, or a combination of these that is designed especially to prevent erosion, to maintain fertility at a desirable level over a long period and to retain the moisture content of soils.[2] Gully-control dams, strip-cropping, tree planting, and diversion terraces are typical examples of individual practices and measures. In application, these and others in combination constitute a soil and water conservation program. Thus, it is necessary to differ-

[2] For a definition of conservation in economic terms, the additional phrase, "to the extent that can be economically justified," should be added. This determination is the object of economic evaluation.

entiate between soil and water conservation and the many aspects of land or farm management that are not designed to produce the indicated attributes of conservation.

In connection with evaluation, the question has frequently arisen as to whether individual practices or the program as a whole should be the basis for evaluation. It should be clear that in order to plan the most productive program it is essential to know the effect of the several constituent parts,[3] both singly and in various combinations. The inclusion in a program of measures which do not contribute to the desired aim sufficiently to justify the costs thereof is an obvious waste.[4] After the program has been planned on this basis, for any set of circumstances, it then may be appraised as a whole.[5]

Too avid adherence to the "program" idea leads to the impractical application of somebody's ideal combination of measures and practices for controlling erosion. It should not be necessary to seek a place for any part of a program. Soil conservation on each farm should consist of those measures and practices that are specifically needed rather than a fixed set of things that must be done. Therefore, the planning of each farm unit involves the application of evaluation to determine the more productive combination of measures in each instance. The economy of production, in addition to the physical need for the conservation of soil and water, must be the guide.

Two general types of effects or attributes may result from soil and water conservation on farm lands: (a) *direct*, and (b) *indirect or extended*. The direct costs of soil and water conservation range from initial investment and cost of operation and maintenance, which are more or less tangible, through the less tangible time-preference costs, including interest and discounts for risk and uncertainty. Under certain conditions changes in land use in behalf of erosion control may involve reductions in current incomes. These reductions may represent costs to farm families who have no possibilities for alternative employment. Although long-term incomes might be greater as a result of the change, the postponed incomes may be

[3] National Resources Planning Board, *National Resources Development*, Report for 1942, p. 86.

[4] See E. L. Grant, *Principles of Engineering Economy*, Ronald Press, 1938, p. 146.

[5] For a different emphasis see Bernard Frank and E. N. Munns, "Watershed Flood Control: Performance and Possibilities," *Journal of Forestry*, Vol. 43, No. 4, April 1945, pp. 245–47.

beyond the scope of interest of the farm families who currently depend on the land for a livelihood.

Direct benefits also vary widely in tangibility. They include such tangible items as increases in crop yields, reductions in sedimentation, reductions in water run-off, and flood damages. Among the more intangible direct benefits are the amenities that people may enjoy as a result of living in a community of well-conserved farm and forest lands, compared to one which is being destroyed by erosion, floods, and exploitation. The relative safety and freedom from risk that may be the result of less severe floods and crop damage may be of considerable significance in some localities. The guarantee of continuous supplies of food and fiber provides a basis for important consumer benefits over a period of time.

Indirect or extended effects of soil and water conservation often may be rather nebulous and intangible. Yet certain benefits of this character frequently have been given substantial weight in benefit-cost comparisons. Indirect *costs* usually have been given less emphasis.

Among the indirect effects that might be claimed are: (a) contributions to national security; (b) stability of earnings to processors, distributors, and others who depend on farm production from certain areas; (c) greater human welfare resulting from a well-nourished population; (d) stabilized financial support of essential public services; (e) lower value of resources expended for conservation compared to possible higher values for other uses; (f) higher consumer prices for some commodities, the production of which is reduced in behalf of conservation (and the converse in instances where production is expanded); and (g) higher costs to some producers as a result of increases in demand for materials and supplies that are used in establishing widespread soil and water conservation. It is obvious that certain of these effects may be offset by others. Still others may not be valid, depending on the circumstances which prevail at any particular time.

The question that arises now is, how can this maze of tangible and intangible effects be reduced to a common denominator, assuming that all those mentioned and many more actually are claimable as costs and benefits? The first step in making benefit-cost comparisons is to trace the initial or direct effects of the conservation of soil and water to their final incidence. Values to recipients can be established only in relation to the incidence of the effects

(i.e., who bears the costs and who receives the benefits) and the circumstances which characterize the incidence. Then, it may be possible to trace and evaluate certain of the indirect effects.

As a basis for tracing and evaluating these various effects, they may be considered from two fundamental viewpoints: (1) private, and (2) public. Depending on the viewpoint selected, a particular effect may be a benefit or a cost, or it may not be considered in the appraisal at all. This possible divergence in the recognized scope and importance of possible effects gives rise to much of the variation in the prevailing concepts of the need and justification for conservation. These concepts will be useful in benefit-cost evaluations as a means of prescribing the scope of any particular evaluation, as a framework within which the final incidence of the several effects may be traced, and as a basis for determining the values that may be attached to the different effects.

The *private* viewpoint is frequently referred to as the entrepreneural or firm interest; but in this setting the scope of the concept is broadened to include both producer and consumer effects. Thus any effect, whether tangible or intangible, would be considered as the individual businessman or consumer would view it. In terms of the farmer or other businessman, an effect would be considered a benefit if it were appropriable as annual income or capital value; and a cost would appear either as increased outlays or as reductions in these items. For the consumer or the individual, conservation may affect levels of living through its influence on the current and future supply of general and particular agricultural commodities.

The significance of the private viewpoint, insofar as evaluation is concerned, is that any effect would be considered only in terms of a particular individual firm or person. Possible counteracting effects accruing to other individual or group interests would be ignored. Thus a certain individual or firm may have either a limited interest or none at all in some types of conservation where the benefits would accrue in the distant future or where they would accrue chiefly to others. In like fashion, the failure to conserve (exploitation) may be a net gain to a specific individual operator because he is not required to bear all the associated costs. Future generations may bear the costs in the form of reduced consumption, or the neighboring farm may suffer the damages of excessive runoff and erosion.

The *public* viewpoint extends beyond the scope of individual

private interests, and consists of two phases: (a) aggregate private, and (b) social interests. The separation of private and public interests may not always be clear-cut, particularly if an attempt is made to summate the private effects of conservation for any particular area or group. Any attempt to move away from the individual and to encompass more than the private entrepreneur would recognize, leads toward the public viewpoint; but the transfer to the full public viewpoint may not be complete. For example, all the benefits and costs for a certain area might be accounted for, and the public viewpoint would characterize the approach within the limited area. However, unless the effects on other areas and for the Nation as a whole are included in the evaluation, the full public viewpoint will not be realized.[6]

The first step in meeting the requirements of the public viewpoint is to *aggregate* the private effects.[7] This entails a summation of all entrepreneural and individual (private) effects, which provide a result that might be termed the net private effect. Thus, the beneficial effects accruing to one individual or firm must be offset by the detrimental (cost) effects accruing to others in the same and different localities. For example, suppose that one type of farming is expanded greatly in a certain area and that the resulting farm incomes are substantially enhanced. At the same time, however, farm incomes in a competing area are forced down by the increase in commodity supplies. The aggregate private effect is the net gain or loss, or the two may cancel, depending on the elasticity of demand for the commodities in question. A similar aggregate accounting would also be made for the tangible and intangible consumer effects.

The *social* phase[8] of the public viewpoint would allow for numerous effects that are not likely to be reflected directly in the judgments and reactions of individuals and firms. For example, the value of producer and consumer benefits that are expected to accrue in the distant future would not be reflected in current market

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[6] International considerations may assume substantial significance as the World of Nations develops.

[7] The concept of "aggregate private effects" is essentially the same as Pigou's "marginal social net product," except that Pigou apparently assumes this to be the total public effect. (See A. C. Pigou, *The Economics of Welfare*, Macmillan, 1938, Chapter II, p. 131.)

[8] For a comprehensive discussion of society's interest, see Arthur C. Bunce, *Economics of Soil Conservation*, Iowa State College Press, 1942, particularly Chapter 8, pp. 97–128.

considerations. The future value of exhaustible and irreplaceable resources and the general benefits that accrue to people regardless of their economic status are difficult to interpret in terms of market criteria. Likewise, the value of a high level of conservation as an item in national security may not be a part of any individual's economic considerations, but the social value of this factor may be extremely significant.

Although these viewpoints are not completely independent and mutually exclusive, they should aid in understanding the problem of tracing and identifying the various effects which result from the application of soil conservation measures and programs. Various effects may assume widely different values, depending on whether the final incidence is limited or general and when the particular effects are expected to accrue. It should be observed that the private and public viewpoints here described are not additive as separate segments of the evaluation process. Final evaluations should be based on one selected viewpoint, which may be characterized as primarily private, or primarily public. The distinction is that the public viewpoint is more inclusive in that an attempt is made to cover all benefits and costs to whomsoever they may accrue.

Evaluation Principles and Problems

The primary aim in developing evaluation procedures should be to design ways and means of obtaining an accurate picture of the effects that reasonably may be attributed to the measures and programs under consideration. Basic to such determinations is the application of the "with and without" approach. Applied to conservation, this involves an attempt to measure the difference between future benefit and cost streams, with and without the application of given practices and programs.

The typical cost pattern of a soil and water conservation program reflects comparatively large initial capital costs, with maintenance and replacement costs accruing annually and periodically after installation has been completed. Benefits, on the other hand, may be limited during the early stages, but they may then be expected to accrue more or less regularly over an infinite period of time. It should be noted that infinite returns require adequate maintenance of the several measures and practices.

From the entrepreneural (farmers') point of view, the principal benefits from soil and water conservation will accrue as "increases"

in agricultural and forest production. This pattern of increased production may take the form of maintaining the current level of productivity in comparison with what otherwise would be a declining trend. If elements of rehabilitation are involved in the program, the pattern of accrual may be one of gradual increase from any given point and stabilization of a higher yield level for an infinite period. Or if conservation involves a shift to a less intensive land use, the benefit accrual pattern may be one of sudden reduction in current productivity to a point where productivity can be stabilized. In any event, the assumption is that the level of productivity under conservation will be higher than would have been the case otherwise. The object of measurement and evaluation is to determine "how much."

The point at which the effects of conservation should be measured has been subjected to considerable controversy. Some analysts have felt that the results of conservation must be measured as *farm* or *labor* income in order to include the "full impact of the program." In other words, the job would be one of gathering basic data by cost account routes or periodic surveys that would indicate the actual results of conservation as applied to "going concern" farms by measuring the difference between total farm expenses and gross income. The trouble with this approach is that so many uncontrolled factors influence farm costs and expenses that it is impossible to isolate the effects of conservation.[9] On the other hand, there is the possibility of measuring the increases in farm and forest production in physical units to be interpreted in terms of dollars, and in terms of farm income through the budgeting process.

In applying the *with* and *without* approach, the effects of conservation on farm and forest lands may be measured by establishing experimental check-plot or field comparisons. The aim would be to have comparable areas of treated and untreated lands, under controlled management, from which the productivity could be measured. This means that the first step—the job of gathering the initial data—is properly a task for physical scientists, with economists indicating the form of data necessary for subsequent

[9] For more complete discussion of various methods of collecting basic data see E. C. Weitzell, "Evaluating Soil Conservation," this JOURNAL, Vol. 29, No. 2, May 1943, pp. 475–94. Also Neil W. Johnson, *Analysis of the Present Program of Research in the Economics of Soil Conservation, and Suggestions for Its Improvement*, Bur. Agr. Econ., March 1943.

economic interpretation. Then it will be the job of the economists to evaluate the physical data in terms of net income. This may be done on an areal ("resource areas" for example) basis, assuming a certain distribution of specific landuse patterns; or the results may be budgeted for average or typical farms as *farm income*. In either case, there appears to be no reason why reasonably accurate estimates of areal effects cannot be made. The calculations would be free from the numerous uncontrolled factors which have no direct relation to conservation.

It should be observed that considerable research in ascertaining the physical effects of conservation has been done by agronomists, soil technicians, foresters, and others. Most of these data, however. have not been translated into economic terms; and some may not be adapted to this use. Closer cooperation between economists and physical scientists should make the product of each more useful.

As an alternative or in addition to the experimental plot and field procedure, it may be possible to select comparable farm units that could be operated under controlled conditions as the basis for making the with and without benefit-cost appraisals. Whether enough of such farms could be selected to make the results useful, as a basis for areal estimates, is a major question. In order to do this it would be necessary to select them as representative of "resource areas," or some other more or less uniform area to which the data could be projected.

In addition to the individual enterprise or farm-business considerations, the effects of a particular conservation program on other private interests, and the public or social effects must be measured as well. Possible and acceptable approaches to the latter aspect of the job are not so clearly discernible. The private benefits that accrue to under-employed labor as a result of expenditures for conservation is a case in point. Theoretically, it would be possible to measure such increases in employment and incomes. But as a practicable matter it is difficult. It may be possible to develop factors based on the extent that certain volumes of expenditure would utilize available under-employed resources. Actually, the best that could be expected would be a considered estimate.

The extended losses or benefits associated with reductions or increases in crop and livestock production in a particular area or region presents equally difficult measurement problems. Reductions in row crops may mean tangible losses to the processors, handlers,

and distributors of the products who depend on a certain volume of business from a particular area. Substantial increases in grass and livestock in one region may mean greater competition, lower prices, and financial losses to the producers of the same products in another region. At the same time, the benefit of lower prices to consumers, and the long-time value of soil-resource conservation may offset any of the aforementioned losses. But the extent is a matter of judgment. However, the quality of the judgment will depend on reasonably accurate estimates of the initial increases or decreases in production that may be expected to result from the conservation program.

Certain benefits, such as reductions in highway maintenance and stream-channel clearance as the result of less erosion and sedimentation, can be valued directly as damages that would otherwise require an equivalent cost for repair and reconditioning, or as reductions in the cost of providing desired services. Reservoir siltation is a matter of placing a value on the reduction in the useful life of the improvement in terms of replacement costs or decreases in the value of services provided. More or less tangible effects of this type accruing to private or public investments may be evaluated with a reasonable degree of accuracy.

The additional security that farmers and others enjoy as a result of reduction if flood hazards may be measured as increases in real estate values resulting from lower capitalization rates, and increases in annual incomes. Certain amenity values associated with reduced flood risks and the enhanced desirability of living within a particular area also be may reflected in land values.

Social values present the most difficult measurement problems. The value of conserved land to national security, increases in the general welfare of the people over a long period as the result of adequate food supplies, and other welfare benefits are typical examples. Although considered qualitatively in past evaluation experience, little progress has been made in attaching quantitative weights to this type of benefit. However, it may be possible to include items of this type in the quantitative evaluations by making certain adjustments in the more tangible values that have commonly been expressed in monetary terms.

Prices and Interest Rates

An essential part of the task of estimating the probable benefits that may be expected from land-treatment programs involves the

determination of the prices that are appropriate for use in valuing various units of benefits and the rates at which annual capital costs should be computed and future values discounted. Moreover, in the determination of these two factors, modifications may be made in order quantitatively to express certain social values that usually have been treated only in qualitative terms, if at all.

So far, the dollar value is the only acceptable unit of measurement for reducing the various costs and benefits to a common denominator. Furthermore, appraisals of the relative desirability of present and future effects must be made in terms of prices and interest. Hence, if costs and benefits are to be given effective weight in the evaluation process, they must be included in the dollar-value determinations. Human lives and numerous other quantitative items may be counted, but in order to relate benefits and costs they must be reduced to some common reference.

The usual practice has been to consider the direct tangible costs and benefits which accrue to private or entrepreneural interests in terms of market prices. In many evaluations, current or prevailing market prices have been used; but, more commonly, normal prices derived as an average for some historical period have been the basis for evaluation. Although it is difficult to justify the use of any particular historical price level as the basis for long-term future values, prices during some more or less stable period may provide a convenient starting point. From this base the attempt would be to m ke such adjustments as may be necessary in order to account for the outlook for each type of commodity, service, or cost involved in the evaluation. The resulting estimates would represent a series of expected future normal prices, the average of which might be higher or lower than that of the base period. From a private enterprise viewpoint, the price levels appropriate for comparing costs with benefits would be current prices for initial capital outlays and normal prices for all benefits and such recurring costs as operation, maintenance, and capital replacement.

Interest and discount rates represent another type of price, the function of which is to equate values and costs accruing at different points in time. Any cost expended currently may be compared to a future benefit only in light of the alternative present values that are foregone in favor of the future.[10] Current practice has been to adhere

[10] See L. C. Gray, "The Economic Possibilities of Conservation," *Quarterly Journal of Economics*, May 1913, p. 515 for an able discussion of this and other aspects of the theory of conservation.

rather closely to borrowing rates in establishing bases for converting costs to an annual equivalent, or in adjusting benefits to a comparable time basis. Two types of cost rates have been used as the basis for discounting benefits. One involves the use of a rate which approximates the interest rate on borrowed capital considered from the viewpoint of the beneficiary. The other has been the use of the Government borrowing rate in treating all types of costs and benefits, both public and private. The Government borrowing rate, aside from inflation possibilities, is practically risk free, so that its application to benefits would understate the risks involved from either the private-enterprise or the public viewpoint.

As with commodity prices, the application of a normal concept, rather than the prevailing interest rate appears to be desirable. Only in case funds may be borrowed for a term approximating the life of the project would current rather than normal rates be more likely to reflect the costs involved. Whether the same rate should be used in treating both benefits and costs is another aspect of the problem. The probability that costs would be more certain than benefits suggests the need for a higher rate in treating benefits, if the difference in risks is to be recognized.

Modification in market prices of commodities or interest rates to reflect social values constitutes a major problem of evaluation that has received only limited attention in connection with current practice. Some modifications of this type may appear feasible; others may be more difficult. Allowances for costs and benefits that are not exchangeable in the market and adjustments which would take account of differences in purchasing power represent areas in which some progress might be made. In this connection any modifications should be consistent with respect to both benefits and costs within projects and between projects. Otherwise the possibility of comparative analyses is nullified.

For certain types of benefits which might be purchased in the market it may be possible to estimate the price that would be paid if incomes were equitably distributed. The social value would accrue as a result of supplying all or most of the people with goods or services that only a few are in a position to purchase under prevailing income patterns. Thus the market price for any particular quantity of benefits would be modified so as to provide a total value commensurate with the total consumer value under the improved consumption pattern. This procedure would not result in

complete coverage of social benefits, nor, necessarily of any single benefit. Social values associated with certain types of consumer benefits (such as long-time health and welfare) might not be recognized by individual consumers and for these values they would pay nothing. In addition over-all social values such as the assurance of adequate supplies of food and raw materials for future generations and national security would not be recognized by individual consumers under any reasonable assumption.

The question of social values again arises in the case of current market interest rates. Should the supply price of capital be used to discount benefits that carry a high degree of social significance? This is another point at which it may be possible to modify the usual private or entrepreneural consideration in order to account for social benefits. As in the case of market prices there are again no adequate guides as to how much market rates should be modified to allow adequately for any specific consideration involved in soil conservation. Use of long-term Government interest rates, rather than private market rates, as the basis for discounts may be justified only on the basis of the social values involved. The assumption may be that the potential social value of a particular investment is sufficient to offset the risk involved, and that an essentially risk-free rate is adequate to balance present and future social values. Or the assumption might be that the rate needs to cover only risks, if the productivity of capital may be disregarded as the basis of interest where there are no alternatives, as in the case of exhaustible, irreplaceable resources.

It remains, however, that no adequate guides are available for the quantitative expression of most social values. Until additional tools are developed, it will be necessary to use those that are available, even though it is recognized that some of these tools are not completely adaptable. As J. M. Clark so aptly states " . . . simple fiscal calculations must continue to be used, with the proviso that they need adjustment, but that radical adjustments should not be made unless sufficient cause is shown in the particular situation involved. Ordinary economic prudence should continue to take as its point of departure the calculation of whether the works concerned are worth the amount of money spent, in the usual fiscal terms."[11]

[11] J. M. Clark, *Economics of Planning Public Works*, National Planning Board 1935, p. 57.

Comparative Evaluations

To the extent that it is possible to measure quantitatively the costs and benefits of soil and water conservation in monetary terms, certain acceptable procedures should be followed in calculating the comparative productivity of project investments. As stated and implied throughout this discussion, the principal need for economic evaluation in the field of land development and conservation is to develop criteria for guiding the design of projects and programs. It is recognized that both private and public resources are limited, and that they should be expended and utilized in the most judicious manner. Thus, the job of economic evaluation is to (a) select the most profitable alternative combinations of measures and practices, and (b) determine the most productive intensity to which they may be applied. The usual aim should be to plan any particular project or program in a way that will produce the *largest total net benefits.*

The procedure for making this appraisal is usually referred to as "marginal analysis." The theory of this type of analysis is that maximum net income of any project or program will be achieved when the most productive combination of measures and practices have been applied to the extent that the last unit of expenditure (cost) equals the corresponding marginal unit of income (benefit). It will not pay to apply the program more intensively because each unit of cost expended beyond the marginal equilibrium will return less than its cost. This aspect of cost-benefit analyses is frequently disregarded. The usual practice is to compare costs and benefits as a ratio, and to conclude that a ratio of "one to one" is the justifiable margin of intensity. To the contrary, it is clear that for any diminishing returns investment, the ratio of benefits to costs will be greater than one to one if the intensity of the cost applications is limited to the margin where the last unit of benefit is equal to its cost. The extent to which this will be true depends on the rate of decline in the diminishing returns schedule as additional inputs are added toward the intensive margin.

The evaluation of investments in soil and water conservation should proceed on the basis of this fundamental principle. In appraising possible alternative measures or programs the *first* step is to determine all the cost and benefit effects that can be measured quantitatively for each alternative. *Second,* these effects must be measured (or estimated) and reduced to comparable monetary terms according to the patterns of occurrence over time and the

nature of the incidence thereof. *Third*, benefits which are expected to occur in the future should be discounted at an acceptable rate in order to reduce them to comparable present values. *Fourth*, the comparison of costs and returns is usually done on either of two separate bases: (a) total present value of benefits is compared to that of costs, or (b) average annual benefits are compared to average annual costs. In comparing present values initial capital outlays and the discounted value of the costs of operation and maintenance are compared to the present value of gross benefits. On an average annual basis average annual benefits are compared to the combined fixed annual and variable costs, which would include operation and maintenance, interest, and amortization or replacement on the capital investment.

Comparisons based on present values and on average annual values or average annual equivalents represent the two most frequently used of several possible types of cost-justifying and project-rating criteria. When the same discount rate is used in treating both benefits and costs, the resulting ratios from the two methods are identical, regardless of the pattern of benefit and cost accrual. If a higher discount rate is used on benefits, the present value comparison will result in a less favorable ratio than that computed on the basis of average annual relationships. The full effect of differences in risk between benefits and costs may be reflected in the present value comparison, whereas risk differences are given but limited weight in the average annual comparisons. When emphasis is placed on the most effective use of limited funds, the rate of return on fixed investments may provide a more significant criteria for arraying projects according to relative desirability than either the present value or the average annual form of benefit cost comparisons.

Usually the criteria for project planning (justification for varying amounts and types of investment) will be the "maximum total net return." This means that a soil conservation project or program would be planned so that each phase would be applied to the point of intensity where the last unit of input would yield no less than its cost. If the analyses are developed so that for each unit of input the corresponding benefits are known, the marginal analysis will be simplified. Units of input may be in terms of cost-segments for a single measure, or each measure may be considered as an input-unit. In the first case the most profitable intensity would be determined by applying inputs until the resulting additional benefits were just equal to the last cost input. In the latter case, the combi-

nations of measures would be varied until the most profitable combination was found. Thus the unproductive aspects of any proposed program could be eliminated.

This type of analysis is essential to the intelligent investment of either private or public funds which are necessarily limited and for which there are alternative uses. Certainly, funds should not be invested in any part of a program which does not return an equivalent benefit. In fact, there may be instances where Government may recognize so many needs for the limited funds available that it would be advantageous to limit the intensity of any one project to the maximum rate of return per dollar invested, rather than the maximum total net income. At this point a number of factors enter the picture. Among them are the questions as to whether the partial investment would destroy future development that could be anticipated, and the possibility of adding to the intensity as funds become available over time. Farmers, too, might consider several alternatives, insofar as a particular year is concerned, in this same light. Thus, the aim would be to maximize total earnings over time from several different types of investment rather than to extend a single investment to its marginal intensity. Under no circumstances should investments be made beyond the margin. Farmers will aim to intensify up to the margin because it is presumed that competition for basic land resources (most scarce factors) will force them to intensify capital and labor inputs on a fixed area of land, in order to maximize net earnings.

It follows that if all benefits are included in the ratio, the investment should not be extended to the point where the benefit-cost ratio is 1 to 1. In past practice only those benefits which could be readily expressed in monetary terms have been included in the ratio. Thus, it could be argued that the total benefits, if all could be reduced to monetary terms, would result in a ratio substantially in favor of benefits. This stand is difficult to refute, particularly as it is probable that evaluations must continually include qualitative consideration of numerous extended and intangible benefits, in addition to those quantitative values that are essential for the marginal type of analysis. However, it should be recognized that past practice also has excluded numerous intangible costs that may be highly significant. In general only limited consideration has been given to the need for designing projects and programs by making a marginal analysis of each component measure as a part of the total. The preference has been to compute the total benefits and costs for

an assumed program, on the questionable assumption that each component measure was justified by its contribution to the program. Again, one of the principal considerations has been that of simplicity and feasibility, because costs frequently may be joint between several measures and separate analyses would entail complex and arbitrary cost allocations.

Need for Improved Basic Data

The transfer from the theoretical framework, herein described, to the practical job of planning and designing land improvement projects may not be entirely apparent. The burden of subjecting each segment of every project and program to the detailed array of input-output calculations that are necessay in order to determine the marginal relationships between benefits and costs for each input unit may seem unbearable. However, there are three ways of transferring from theory to practice that seem to offer some practical possibilities. *First*, the planners and designers of programs and projects should use these theoretical principles as guides in their qualitative consideration of various measures and practices. *Second*, the marginal approach is a valid procedure for determining the comparative productivity of various alternative measures and practices (each alternative considered as a single input unit). *Third*, the greatest practical use of marginal evaluations can be achieved only if adequate basic input-output data is made available from past experience and experimental projects. The comparative productivity of various measures and practices, applied at varying intensities under the full range of possible physical conditions, then, can serve as "grist" for the mill of project planning and design analysis.

Thus, it is clear that most benefit-cost evaluations are estimates of what will result, rather than measurements of what has or is resulting. The aim is to make advance estimates of the economic effects that may be expected to result from alternative combinations of measures and practices that might constitute a soil and water conservation program, as a basis for designing and planning specific projects. At the same time, analyses of this type provide the cost justifications that should guide the investment of both private and public resources.

The greatest weakness in economic evaluation shows up at this point. The principal need is for research projects to assemble physical data which depict the inputs and outputs of various soil and water conservation measures, applied at varying intensities and in

alternative combinations. To be useful, these data must be collected so that they will represent specific land resources and associated conditions. The application of monetary values to these inputs and outputs should be a part of the assembly process; otherwise significant physio-economic relationships may be lost. Not only is it necessary to gather basic data of this type for those costs and benefits that are readily commensurable in terms of crop yields and fertilizer costs, but observations and appraisals of the intangible and extended benefits produced by existing projects and programs should be made. Only after adequate basic data have been assembled from experience can the evaluation of proposed soil and water conservation programs be made intelligently.

Another type of data is needed especially to facilitate the projection of costs and benefits into the future. Acceptable long-term or "normal" prices for translating costs and benefits into monetary terms is essential. Although most initial private costs should be in terms of current prices, the great variation in prices applied to operation and maintenance costs should be replaced by standardized future price schedules. The monetary values of both private and public benefits, also, must be standardized as much as possible. Substantial reasons may exist for considering all public costs, as well as benefits, entirely in terms of long-term or normal prices, as an appropriate basis for allocating resources.

In addition to the general need for improving and standardizing analytical techniques and methodology as procedural guides, greater attention should be given to expanding the coverage of both benefits and costs. From the standpoint of public investments, quantitative evaluations should be extended to cover as many of the public effects as possible. The aggregation of all private effects and the modification of the values applied to private benefits and costs should be explored intensively as possible approaches to expansions in the scope of coverage.

The aim should be to improve the reliability and significance of economic evaluations for determining whether the benefits from public programs are sufficient to justify the costs. Even though complete coverage of all effects may not be feasible, an increase in the area or proportion of effects subject to objective evaluation would be a definite contribution. Progress toward this goal is a challenge that must be met if benefit-cost evaluation is to merit acceptance as a scientific process.

CURRENT ISSUES IN FEDERAL LAND MANAGEMENT IN THE WESTERN UNITED STATES*

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THE federal ownership of privately used lands and the policies followed by the federal agencies that manage those lands are among the important economic issues in the western United States and among the more controversial issues in that region. The agriculture of the West—and that means for much of that area its major economy—depends for its very existence to a considerable degree on land in federal ownership; that in itself would make the matter important. But when we add that there is sharp and widespread conflict over the very existence of federal land ownership in the West as well as over the manner of its management, it is apparent that here is a problem that demands attention.

The subject covers a wide range of issues and is exceedingly complex. It goes far beyond what can be covered within the limits of this paper. Federal lands are not a homogeneous category, nor is their management a homogeneous function. Federal lands vary because their character, situation, and use vary widely; their management varies not only because their character varies, but also because they are managed by several federal agencies whose policies and methods are not uniform even though they are all "federal."

Except for land held by the Bureau of Reclamation and for some land held by the Indian Service in trust for the Indians, federal lands in the West do *not* include much, if any, land that is valuable for crop production or other relatively intensive use. But they do embrace lands suitable for a wide range of extensive uses. Federal lands in the West are used for the production of lumber and other wood products; for watershed protection to reduce flood and silt damages below them; for water production for irrigation, municipal water and power; for recreation including both summer and winter cabin sites and including wildlife for hunting; for grazing by domestic livestock; for restoration of impaired resources; for Indian welfare; for military training and storage depots; for mining and prospecting for mineral wealth, to name the more important.

The federal agencies responsible for land management in the West

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are well-nigh, though not quite, as numerous as are the uses to which the land is put. Federal lands in the West are managed by the Forest Service, the Bureau of Land Management, the Park Service, the Indian Service, the Bureau of Reclamation, the Fish and Wildlife Service, the Soil Conservation Service, the Departments of War and Navy, to name the more important ones. If these were merely operating arms of an agency possessing a single management policy, the list would be of only academic interest. But because each agency, within the limits of law and subject only to the most general kind of overhead unification, makes its own management policies and determines its own operating methods, the complexities attendant upon the widely divergent uses to which the lands are put are compounded by the divergencies in management policies.

The volume of resources encompassed by federal management in the 11 western states is huge—both in acres (406,500,000) and in proportion to the total land area of these states (54%). Of course, these federal lands are the lesser productive lands of the West, so that their physical contribution to production is not proportional to their acreage, but because of their vast area, because they constitute a large proportion of all lands, and because they furnish some irreplaceable resources (summer grazing, for example), they are of tremendous importance in the West.

Although this is a session on Land Economics, our concern is primarily that of agricultural economists; and so, rather arbitrarily, I shall confine consideration of this western federal land problem to those of its aspects that are agricultural, including forestry. We will consider it from the standpoint of lumber production, grazing, watershed protection, and water yield, and those aspects of recreation that are inseparable from the other uses named. The federal lands we will be considering in this paper are primarily those administered by the Forest Service, the Bureau of Land Management, and the Soil Conservation Service. These three agencies administer 78% of the 406 million acres of federal land in the eleven western states, or 42% of all the land area of these eleven states.[1]

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[1] Consideration of the use and management of Indian lands by the Office of Indian Affairs will not be included in this paper because these lands present problems peculiar to themselves. To include them would seriously complicate the paper; they are, nevertheless, the principal category (11.1%) of federal western land not included here, and they are used primarily for agricultural purposes.

The Bases for the Current Issues

Before we take up the issues relating to federal lands in the West, it will be well to review rather cursorily the circumstances out of which the issues grow. Three factors that are basic to the issues relating to western federal land management are (1) the fact that federal managing agencies perform many ordinarily private functions, (2) multiple-use management of federal lands, and (3) administrative allocation of publicly owned resources to private enterprisers. Each of these will receive brief consideration.

The Federal Managing Agencies Perform Many Ordinarily Private Functions

The federal agencies that manage federal lands in the West perform many functions ordinarily associated with private enterprise. Typically the federal agency managing land in the West assumes the cost and responsibility for producing the land's crop; the right to harvest the crop is then sold or leased or permitted or given outright to private enterprise for exploitation for private profit. On federal timber land, the federal agency grows the trees at public cost and decides when and what trees to market; it then sells the trees "on the stump," usually at competitive bid, to a private operator who will harvest and market the crop under specified rules and regulations. On federal grazing land, the federal agency will manage the resource, improve and develop it, and plan its use all at public cost and will "lease" or "permit" its use to a stockman to harvest and market the forage through livestock for a term of years, at a price, and subject to rules and regulations. On watershed lands, and likewise on recreational lands the federal agency produces the water, or the game, or the recreational attributes and facilities; it produces them at public cost but makes the "product" available to the general public without charge, whether the product be water to use in private production, or game, or camping, or other form of recreation.

For some uses the federal agency manages the resource at public expense for use by the general public; for other uses the agency manages the land to create a product that is disposed of for a charge through private enterprisers as a basis for private profit. In some settings the agency functions in a manner and for purposes that the ordinary citizen associates with public enterprise; in other settings it functions in a manner and for purposes that the ordinary citizen

TABLE I. RURAL LAND HOLDINGS IN FEDERAL OWNERSHIP, BY PRIMARY ADMINISTERING AGENCIES IN 11 WESTERN STATES, 1945[1]

	Arizona	Colorado	Idaho	Montana	Nevada	New Mexico
	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)
Forest Service	11,473,127	13,684,788	20,069,831	16,333,259	5,051,372	8,973,756
Grazing Service[2]	10,164,275	7,973,254	12,469,654	5,920,299	33,315,790	15,071,681
Office of Indian Affairs	19,423,454	730,273	864,532	6,502,866	1,141,170	6,657,738
General Land Office[2]	2,501,026	677,530	503,106	1,821,247	12,810,844	524,397
National Park Service	1,144,573	518,270	70,581	1,140,924	115,849	230,739
Bureau of Reclamation	3,351,813	172,484	356,664	250,600	1,534,829	188,558
Soil Conservation Service	46,712	655,042	126,149	1,918,248	3,385	655,950
Fish and Wildlife Service	120	2,786	11,265	90,095	2,240,334	76,092
Farm Security Administration	6,019	5,037	9,947	73,140	0	92,135
War Department	4,968,847	698,094	63,938	719,720	3,463,280	2,077,367
Navy Department	0	59,168	22,479	0	175,277	0
Agricultural Research Administration	315	66	32,516	73,312	160	0
Other Agencies	11,575	1,667	8,308	701	13,562	33,022
Total	53,391,856	25,178,459	34,608,970	34,834,411	59,865,852	34,581,435
Land Area of State	72,691,200	66,538,880	52,997,120	93,642,240	70,273,280	77,767,040
Percentage of Land Area of State Federally Owned	73	38	65	37	85	44

[1] Many reservations and withdrawals overlap and large amounts of Federal lands are jointly administered and have multiple uses. In this tabulation overlaps have been eliminated so far as possible and all acreages are reported under the one agency considered to have primary administrative jurisdiction. Consequently, the totals listed in this table are not necessarily all the lands administered by the agency for a particular function or use.

[2] The Grazing Service and the General Land Office have been combined since this table was prepared and now compose the Bureau of Land Management.

(a) less than .1 of 1%.

Source: L. A. Ruess and O. O. McCrocken, *Federal Rural Lands*, U. S. Department of Agriculture, Bureau of Agricultural Economic June, 1947. Appendix, Table 25.

TABLE I—(*Continued*)

	Utah	Wyoming	California	Oregon	Washington	Total	
	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	%
Forest Service	7,838,035	8,564,661	19,552,419	14,434,594	9,605,562	135,581,404	33.4
Grazing Service[2]	24,970,216	14,453,545	3,368,194	12,370,503	0	140,077,411	34.5
Office of Indian Affairs	2,524,754	2,080,625	674,370	1,735,141	2,722,605	45,057,528	11.1
General Land Office[2]	355,851	3,208,102	13,454,942	3,045,157	560,494	39,462,696	9.7
National Park Service	285,481	2,317,266	4,154,041	164,863	1,132,837	11,575,424	2.9
Bureau of Reclamation	265,159	1,127,663	1,800,554	194,212	577,925	9,810,461	2.4
Soil Conservation Service	41,929	538,058	18,043	210,693	232	4,214,441	1.0
Fish and Wildlife Service	62,816	32,417	31,534	126,235	59,669	2,733,363	.7
Farm Security Administration	1,117	2,318	2,381	812	844	193,750	(a)
War Department	1,943,063	93,493	1,855,165	314,832	402,882	16,600,681	4.1
Navy Department	92,305	9,641	582,519	3,745	55,768	1,000,902	.2
Agricultural Research Administration	0	0	466	461	0	107,296	(a)
Other Agencies	5,292	4,795	20,709	2,379	8,186	110,196	(a)
Total	38,386,018	32,432,584	45,515,337	32,603,627	15,127,004	406,525,553	100
Land Area of State	52,701,440	62,403,840	100,353,920	61,664,000	42,865,280	753,898,240	
Percentage of Land Area of State Federally Owned	73	52	45	53	35	54	

associates with private enterprise. Out of this circumstance alone arises some of the conflict over federal ownership of western lands; it doesn't square with some citizens' notions of what is "right."

If we could divide the federal lands of the West into two gro ps, on one of which functions are performed that are ordinarily thought of as public, and on the other of which functions are performed that are ordinarily thought of as private, then it would only be necessary to decide whether as a nation we wanted those lands on which ordinarily *private* functions are performed to be managed publicly *or* privately. But unfortunately it cannot be that simple. On a large portion of these federal lands, not only one, but *all* these uses, private *and* public, are practiced simultaneously; or if not all of them, at least more than one of them.

Multiple-Use Management of Federal Lands

This is the practice of "multiple use"—the practice that characterizes federal land administration in the West particularly on the National Forests. Under multiple use no one use and no one user is granted exclusive use of any single area, although he may be granted the exclusive practice of one use on an area. Multiple use is simultaneously the chief supporting argument for public ownership and management and the chief source of conflict between users and the managing agency.

When grazing is the only use on federal land, it can be legitimately argued that, in line with long established national policy regarding agricultural land in the United States, it should be privately owned. The whole operation of grazing is in line with what generally is looked upon as private enterprise. Forage is grown, the resource is developed by additions of capital, the forage is harvested by livestock and the livestock sold on the market. There is nothing to distinguish this operation from pasture use on any owner-operated farm in America. But suppose this grazing use is only one of several uses on the same area, the others being watershed protection and water yield which are of equal or, what is frequently true, of greater value than grazing use?

These uses may be and frequently are in conflict. In many instances if the land area were in the exclusive possession of the grazier, removal of the forage cover beyond what is optimum for run-off retardation and water yield would result because to the grazier these latter values represent no return nor any cost, and so he will graze

to what he considers to be the limit of long-run returns to *grazing*. Under such circumstances, the land *must* be in public management if there is to be *any* management specifically in the interest of the other multiple values involved.

But out of this very device part of the conflict over western federal land management arises. Grazing is reduced in the interest of watershed protection and water yield, and the grazier understandably objects. Why should we expect him to do otherwise unless he is motivated by a larger fund of "social consciousness" then are most of us? He gets only slight return from the watershed protection and none from the water yield; he loses directly and immediately for every head of livestock he is prevented from grazing. He has everything to lose and nothing or very little to gain.

Look at the same problem from the standpoint of timber production for wood products including lumber. Growing trees fulfill several other ends besides the production of lumber and wood products; something approaching a climax timber stand may add significantly to watershed protection, to retardation of water run-off, to recreation values, as well as to wood production. But the trees on federal lands, once they are grown, are subject to sale by the federal agency for wood purposes. Within the requirements of the other competing uses for the trees, the agency decides upon a harvesting policy, marks the individual trees the removal of which will effectuate that policy, sells them on the stump to the private enterpriser to harvest and market under rules and regulations as to removal methods. By this process the lumberman, who is a profit-motivated businessman, is spared the "ripening costs" of the slowly growing tree crop and will need to pay only its raw material worth when ready for harvest, a value set usually by competitive bidding at the time. But the lumberman's costs per thousand board feet of lumber sawed go down as the number of thousands of board feet sawed per acre goes up. The lumberman therefore presses on the federal agency "to mark every tree that will make a log"—his costs will be reduced thereby—his net will be increased. But to the administering agency other objectives than maximization of the lumberman's profits enter in to the calculation. Some trees that will make merchantable lumber may be more valuable as watershed protection, as water run-off regularizers, as seed trees for a new crop, as potential sawlogs for an early second harvest which will staiblize dependent village communities. Conflict of interests is inevitable.

Administrative Allocation of Publicly-Owned Resources to Private Enterprisers

This brings us to the third and last of the basic circumstances out of which grow the issues related to western federal land management. A large part of these federally-owned resources are and must be allocated among private enterprisers by administrative decision and not by competition.

Allocation of federal grazing land privileges is a complex administrative procedure. Privileges on grazing lands are granted to owners of livestock who own or legally control dependent land and who must have the use of some range types controlled by the public in order to balance their operation; these privileges are granted to a stockman only for such numbers of livestock as he must have to make reasonable use of his private dependent lands. His use of the public range is subject to rules and regulations designed to protect the public range from deterioration but with an eye also to their effect on his use of his own dependent private lands. The federal agency grants exclusive use of certain resources to a private enterpriser in return for a cash payment *and* the right to regulate, in part at least, not only the private enterpriser's use of the public range but his use of his privately-owned dependent range as well.

Under Public Law 273, recently passed by the Congress, the same procedure of administrative allocation of timber resources can be applied on National Forests. A long time exclusive access to government timber on a specified area may be granted to a single enterpriser in return for public regulation of timber production and harvest not only on the public land assigned to his exclusive use, but also on the enterpriser's privately-owned timber land placed by him in the timber pool. This device is designed to broaden the influence of the federal forest administering agency in obtaining improved forestry on private timber lands. But it does so at the expense of engendering potential conflict—exclusive access to a publicly-owned resource is granted by administrative decision for a long term (one hundred years in the one agreement executed so far) to a single private enterpriser. The cry of "monopoly" is raised by the operators who are or who think they are now denied equal access. And, furthermore, the federal administering agency faces the almost certain probability that as its lands move into these long-time agreements, it will meet the same pressures and conflicts from and with its "timber permittees" that it now faces from its grazing permittees.

The holder of an exclusive privilege of private use on public land, whether it be grazing land or timber land, will urge the enlargement of his privilege, will contest the rules and regulations under which he operates, and will argue the unreasonableness of them when they exist to serve other uses than lumbering or grazing. Those who do not hold privileges on the land but would like to do so will argue favoritism, monopoly, "currying favor with the big operators," etc.

Such conflicts as these are inevitable in a system of administrative allocation of resource use to private enterprisers for exploitation for private profit. *But competitive allocation of federally-owned grazing land resources at least is well-nigh impossible.*

Federally-owned grazing lands in the West almost universally do not lie in blocks that can be organized into successful economic units composed exclusively of federal land. They cannot be "homesteaded" in economic units and thus provide economic opportunities for additional people. If the available *area* of federal land in one block should happen to be large enough for an economic unit, it will not embrace all the essential resources for a successful unit; it will contain no water or no hay lands or its use for grazing will be adapted to only one season of the year. Such lands can *only* be used in conjunction with other lands already privately owned, or with other lands controlled by some other federal agency for other purposes, such as watershed protection, or with other lands owned by a state or a county. The only competition there can possibly be for these federal grazing lands is that between the owners or lessees or controllers or other adjacent lands. It cannot be between these adjacent operators and the citizenry at large. And in many cases there is no competition for their use even with other adjacent property holders; frequently these federal grazing lands are so located relative to other lands that one operator and one operator only can make use of them.

Hence, the debate over the granting of exclusive grazing privileges to established individual stockmen and excluding the general public from grazing access to them is entirely beside the point. The granting of grazing privileges on most of these lands can be competitive only as between adjacent stockmen and frequently can not even be that.

Though it is *possible*, granting grazing privileges on federal land to established stockmen by competitive bidding is very undesirable. It is frowned upon by stockmen and these administering agencies

alike. Competitive allocation of lumber resources on federal land to private operators is the common practice though Public Law 273 opens the door to a change here in line with that on grazing land. Why is it undesirable to allow competitive bidding to allocate grazing use on federal land? The federal grazing privilege can be used only in conjunction with privately owned lands; privately owned lands and their capital improvements represent a fixed and unremovable investment on the part of the private operator. Stability of operations, desirable to individual and society alike can only be insured if the federal grazing privilege is tied to the privately owned ranch lands with some degree of permanence. Subjecting them to competitive allocation would keep the pattern of operations in an impossible state of fluidity and instability. Timber, on the other hand, can be satisfactorily allocated competitively because the harvest of the trees does not involve large unmovable capital investment except in the case of large sawmills. With modern means of transportation the logs can be transported to the mill from over a sufficiently large area to permit steady operation of the mill.

These three basic characteristics of federal land management out of which the issues over western federal lands arise though discussed separately are not separable in fact. Each is in large measure only another way of looking at the others; each is largely an inevitable accompaniment of the others.

Multiple-use management of the lands seems to make public (in this case, federal) management inevitable. Yet multiple-use management creates inter-use conflicts and conflicts between competing users and the federal administering agency. Stockmen want more grass, lumbermen want more trees, recreationists want more timber and game, irrigators want their water in regular flows without floods and shortages. Restriction imposed on each in the interest of others brings the ire of the restricted user down on the federal managing agency.

Multiple-use management means public management of the resource for *all* its uses, many of which will be of a sort ordinarily thought of as *private* in character. This will clash with our cultural belief in private ownership of all such privately exploited assests. Partly, of course, this clash is purely emotional—not, for all of that, any less real nor any less powerful—but not rooted in objective considerations. Partly it is an expression of dissatisfaction with

what, at least to date, have been some of the inevitable features of public management of privately exploited resources. Stability of operations is the will-of-the-wisp forever pursued by enterprisers—when natural phenomena are the cause of instability, they occasion the seeking of relief from the larger community. Natural causes of instability are sufficiently distasteful; just add to that, instability brought about by the acts and decisions of public officials, and the enterpriser calls on the larger community to rid him of this impossible burden. Is it possible to have stability of operation of private enterprise—either lumbering or ranching or resort operation—with public management of all or any significant part of their basic resources? Changing fees, changing rules and regulations of use, changing numbers of stock permitted on the grass, changing numbers and kinds of trees marked for cutting, changing areas of land allotted for grazing or lumbering, changing the weights used in resource allocation as between grazing, lumbering watershed management, and recreation—changes coming with changes in the personalities of the managing personnel, with changes in political controls of government, with changes in public thinking, etc., are extremely upsetting to the managers of enterprise. Demands to get them out of the hands of the "Bureaucrats" are the inevitable outcome.

So we are brought up to a consideration of the issues now extant that relate to western federal lands. We will consider them under three headings—(1) the issue of public vs. private ownership, (2) the issue of federal vs. state ownership, and (3) the issues that arise out of federal management of lands used by private enterprisers.

Current Issues in Federal Land Ownership in the West

The Issue of Public vs. Private Ownership

This, the first and most crucial issue today, is also the most fundamental of all—should these federal lands in the West be in federal—or in public—ownership at all? Shouldn't they be converted into private lands like practically all lands exploited for private profit elsewhere in America?

As with all such broad questions, the answer to it can be neither "yes" nor "no."

Three characteristics of western federal land prevent the major proportion of it being converted to private land. One characteristic

is the multiple-use management of much of it; another is the economic impossibility of much of it paying its own way in private ownership; another is that much of it is not amenable to division into areas for single enterpriser control. We shall look at these one at a time.

First, let us explore multiple-use management. Much of the western federal land is and must be managed in the interest of grazing, timber production, recreation and water run-off regulation, all on the same area and all at the same time. Now, some of these uses, even if they were practiced alone and to the exclusion of all others, would require public—under present conditions—federal management. Recreation or water run-off control, even if practiced alone on an area, are not amenable to private management. If either or both of these uses are important on any area of federal land, it must remain under public management regardless of the amenability of its uses for lumber production or grazing to private control. Furthermore, even if only lumber production and grazing are uses practiced jointly on a given area, and even though such uses, if practiced singly, are amenable to private management, the presence of the two of them together necessitates public management; they are to a degree conflicting uses and private enterprisers do not customarily undertake both enterprises together. Grazing will be one enterprise, lumbering will be another, if ownership of the land vests in one or the other form of private management; one use will take place to the virtual exclusion of the other.

It follows, therefore, that for any and all federal lands on which multiple-use management to any important degree is practiced or required, private ownership cannot be the answer. Western stockmen's associations that at the moment are in the forefront of the drive to convert these federal lands to private lands recognize this fact. No spokesman for these associations argues that *all* federal lands in the West should be converted to private ownership; they very carefully say that only those lands *chiefly valuable for grazing* should be so converted. Now admittedly that concept of *chiefly* valuable can be a fruitful source for argument, but it is sufficient to demonstrate that the livestock spokesmen recognize the legitimate claim of multiple-use lands to public ownership.

Second, let us look at the economic impossibility of some of these lands carrying the burden of private ownership costs. I doubt if there is any intrinsic or inevitable reason why these lands cannot

carry the costs of private ownership. But looking at our cultural beliefs and the institutions they produce, I do not see any early prospect for institutional changes that *will* permit their private ownership at reasonable costs. What are some of these institutional stumbling blocks to private ownership of much of this land? Taxes and investment costs are in the forefront. It is so common as almost to be a maxim that lands of low productivity are over-valued for taxation purposes. Grazing lands as a whole and federal grazing lands in particular are of low productivity, probably the least productive of any lands used for agricultural purposes. It is almost a universal phenomenon that these poor quality grazing lands if privately owned are over-assessed. The only way by which private ownership of these low productive lands can persist at all is by the device of packing into one privately-owned range tract more grazing units, more productivity if you please, than actually exists on it. This act of legerdemain is performed variously by over-grazing (which is but a temporary expedient), by the ownership the tract gives of strategic water or shelter or hay, or by the control it gives over additional forage units that exist on other tracts unowned and unleased by the operator which the taxed tract controls.

It is pretty well demonstrated by experience and experiment that the net economic productivity and hence net capital value of grazing lands in the West falls to zero at some point near a physical productivity of 24 AUM of grazing per section (2.0 cows or 10 sheep per year per section). (This is not a hypothetical, unrealistic figure for the average carrying capacity of Grazing District #5 in Nevada is 2.5 cows or 12 5 sheep per section per year.) Does anyone think the County Assessors would put *any* privately-owned grazing lands on their assessment lists at zero value? Yet if they do not, such lands as these are carrying a higher charge than they are worth and better lands are assessed at proportionally inflated values.

Another and more troublesome angle to this same problem arises because the use of these federal lands has gone on for years without any charge at all being made for their use or with a charge less than private lease rates for comparable land. Now recall that in essentially all cases these federal lands are used only as adjuncts to other privately-owned ranch lands. If you as an enterpriser were able over an extended period of years to acquire an operating unit part of which cost you nothing or less than a full productive value,

what would you consider to be the value of your private land? Certainly something more than the productive value intrinsic in your private land—and that's what has happened extensively in the West. The privately-owned grazing lands as an investment and as a tax base carry values that include to a considerable degree the productive worth of the forage values supplied free by associated federal lands. If, now, you as an enterpriser were suddenly faced with the need for owning these formerly "free" forage resources and you were already paying part if not all of the costs for these resources in connection with the lands you already own, what would *your* reaction be? You would know that now these lands would go on the tax rolls, that the lands you already own would not be reduced in taxable value, and that anything you had to pay for those lands beyond a nominal price would result in investment and tax costs that you already were carrying on your present private lands.

All of this, as I have said, is a difficulty that is man-made; our institutions are not fitted to this situation; there is no intrinsic reason why they might not be. But institutional reform of the sort required is awfully slow, and in the meantime those who buy these lands are penalized to the economic competitive advantage of those who do not. So you can see why in spite of the fact that some of these federal lands *might* justifiably be offered for private ownership, many of them will not be accepted even if offered free of charge.

The economic problem of private ownership of western federal lands has been discussed with reference to grazing land. Much of the same thing can be said of lumber producing land. The private lumberman cannot in most situations, certainly not in the western states, afford to own the land on which his lumber grows. Where he does own "timber land," what he *really* owns is a stand of merchantable timber. When he markets the timber, he will be left with land, the ownership of which he will usually be anxious to rid himself. The long time period of waiting and risk required to grow a lumber crop usually causes the land on which it grows to have a less than nothing value to the private enterpriser. So here, too, even though some of this lumber-producing land might have no other use than that and be amenable to private management, it will not appeal to private ownership *except insofar as it now bears a harvestable crop of trees.*

There is still another characteristic of western federal lands that will prevent some of them moving into private ownership without considerable change in habits of thought and attitudes in the West. Much of this western federal land, even though usable for grazing and for nothing else, is not amenable to ownership and use by a single ranchman. Much of the winter sheep range, particularly, is of such a sort that the sheep bands must be herded over it in wide circles or must be free to move considerable distances as droughts or winter storms may dictate. Single, private allotments are not practicable nor customary; open range herding over a common area with other bands is the long-established pattern. Private ownership under such a pattern of use can arise in case wide areas, huge areas, could be sold to a collective of private enterprisers; this is again not an inherently impossible development but is far from immediate realization entirely because western stockmen generally don't think in these terms. Such an arrangement exists today in the Red Desert of Wyoming and has been in existence for forty years. It's not unknown or impossible—just unfamiliar.

We see, then, three reasons why private ownership of all western federal land is a hopeless goal—the reasons are (1) the importance of multiple-use management, (2) the economic reluctance of private enterprisers to invest in much of it and to be subjected to taxes on it, and (3) the impossibility of some of it being used in independent private allotments. We conclude that private ownership of *all* western federal land is a will-o'-the-wisp; that not all of it can with any practicability whatever be privately owned and managed. Much of it will remain public, federal, even if it were offered gratis to any taker.

But on the other hand, it is equally unrealistic to argue that the federal land of the west must *all* remain federal or even public. For just as it can be pointed out that these federal lands cannot, realistically, be all passed into private ownership, it can be pointed out with equal cogency that not all these federal lands *need* be retained in federal or even in public ownership.

The unquestioned public policy in this nation is for private property in agricultural land. This is true even though much of that private land is subject to varying degrees of variously serious kinds of deterioration under private ownership. But is the institution of private property in farm land under any serious attack for that reason?

Much of western federal grazing land is subject to no more serious, to no more long-run damaging abuse under private ownership than are vast areas of privately-owned farm lands. It is no wonder, then, that federal grazing lands of such kind should be urged as amenable to private ownership. Of course, the whole institution of private property in agricultural land can be questioned; a good case can be built for public ownership of all farm land; but that is an issue for the public to decide and so long as it is overwhelmingly accepted that farm lands be privately owned, then the burden of proof is upon those who urge otherwise relative to a significant portion of western federal grazing lands. A large part of the federal grazing lands in the Great Plains and in the inter-mountain semi-deserts have no alternative or joint use to grazing, and are not subject to self-accelerating erosion from overuse; such lands are amenable to private ownership as soundly, as unquestionably, as the farm land of the corn belt.

Resolution of this conflict over public vs. private ownership of western federal lands (grazing lands particularly) can only be resolved, even partially, by the creation of an agency for separating the lands into two groups—those amenable to and those not amenable to private ownership. What, then, will be posed will be issues relating to the sale into private ownership. These issues are complex. I will not discuss them in this paper in order to keep it within reasonable length. Here is, however, an important problem for western agricultural economists to be working on to be prepared for the day that I believe to be inevitable when transfer of some western federal lands to private ownership will be instituted.

We conclude, however, that *private* ownership of western federal lands is *not* the answer to the problem except on a small fraction of these lands.

The Issue of Federal vs. State Ownership

Just because most of the land must remain public rather than move into private hands does not mean, of course, that it must remain *federal;* it may remain public and be shifted from federal to state ownership. To this issue I will devote little space; it is not amenable to solution by economic argument. It rests in considerations of political science and your philosophy of government. It will suffice to point out that the record of public land management by states and counties in the West shows

no example of public land management of a quality comparable to most of that of the federal government. This is not to argue federal perfection, but merely to point out that as between federal and state or county management, federal management on balance surpasses state or county management in quality. Except for the possibility that certain groups of users might more fully dominate management policy if the lands were in state or county hands, there would be little gained and much would probably be lost by a shift from one kind of public ownership to another. This is the source of much of the stockman pressure in some states for transfer of federal grazing lands to state control.

Issues that Arise Out of Federal Management of Lands Used by Private Enterprisers

There is not time or space here for a complete consideration of the many elements that go to make up the issue of landlord-tenant relations in private use of federal land in the West. It is clear however, that here lie the issues most in need of solution for it is apparent that most of these western federal lands are going to remain federal and are going to be used by private operators under some kind of tenant agreement with the federal landlord. But we can illustrate what is involved by discussion of a few selected points.

1. *Security of expectations* for the private user. The private user of federal land in the West, just like any tenant, seeks earnestly for *security of expectations* with regard to his control over land resources. In its crudest form, this urge expresses itself and is now expressing itself as an urge for private ownership of the land involved. The issue is particularly acute on grazing land. The federal administering agencies have traditionally insisted upon the right of freedom of action to modify use privileges granted. Private users have had considerable real and fancied feelings of insecurity. It is entirely beside the point to argue as do some federal personnel that many use privileges have stood unchanged for long periods; it isn't stability of the past that interests the operator, but the prospect for stability of the future.

Security of expectations in these cases can be enhanced, short of ownership which as we have seen is unattainable in most situations, by either (1) perpetual attachment of granted use privileges on federal land to the private property of the user, or (2) by use privileges granted annually but automatically renewable from year

to year with these additional features: notice of change in allotments to be given well in advance, user and administering agency each to have the right of and access to impartial arbitration of differences, provision for reasonable payments for damages by either party to the injured party and provisions for payment of compensation for unexhausted improvements. Perpetual attachment of grazing use privileges to their private base lands has been the solution long urged by stockmen users; annual allotments automatically renewable is comparable to the arrangements urged upon private landlords and tenants by students of land tenure. The latter has not been generally advanced as a solution for the federal land use conflict because it has not been generally recognized that the relation between administering agency and private user on federal land *is* a relation of landlord and tenant.

2. *Protection* for the landlord against *damage to his resources.* The administering agency, as is true of any conscientious landlord, seeks earnestly to protect his property against waste and damage by the user. In its crudest form, this urge expresses itself as it now does by insistence on the part of the administering agency for complete freedom of action in all matters relating to when, how, and in what intensity the user shall make use of the federal resource. The private user violently opposes this freedom of action on the part of the administering agency; it runs counter to his desires for security of expectations.

3. The *level of charges* levied for use of the federal land. The private user is interested in securing at the lowest possible cost the use privileges made available to him. The administering agency is under continual pressure to set the fees it charges for use of its land at a level fully comparable with that level at which private competition would set them, were it operative.

At first glance it would appear that this conflict of interests is no different from that between private bargainers, and that there should be room for a meeting of minds at fees reasonably close to what free competition might set. It might seem that insistence by private users of the public land upon a fee considerably below rents charged on comparable private land is pure selfishness. But it is not that simple. As a result of long history of use of these federal resources at costs below comparable private land costs, the capitalized savings have become imbedded in the values of the privately-owned associated lands. Under these conditions, any fee higher than the customarily low fees will be too high for the user but this

customary fee is considerably below the charge continually pressed on the administering agency by the public.

4. The decision as to whom among several possible beneficiaries shall be granted the use privileges. Somehow the decision must be made: to whom among several possible users shall a particular privilege on a specific area of federal land be given? The administering agencies have set up various kinds of rules to guide them so that the decision won't be entirely arbitrary: priority of use, degree of dependency, and minimum and maximum limits on privileges extended together with the right to cut at will privileges above the maximum for redistribution to users below the minimum. But administrative decision still is the essence of the process.

Between *private* landlord and private tenant, conflicts over all these points arise but they are settled by competition and negotiation with the judicial process available as an arbiter of disputes growing out of interpretation of the lease contracts. Nothing resembling competition, very little resembling negotiation, and a quasi-judicial process that is not truly judicial regulate the landlord-tenant relations on western federal lands. *Public political debate* is substituted for private negotiation and adjudication as between private user and administering agency on western federal land.

Casting the problem in this form suggests that the basis for solution of the problem lies in the creation of a new kind of public body on which the interests of both the administering agency and the private user are represented. Before this body, conflicts between administering agency, private user and possible user over privileges of use, fees to be charged, rules and regulations related to use, allocations of privileges, damages for waste and compensations for unexhausted improvements can be brought, argued, and arbitrated. Some kind of a set-up which will establish something as nearly as possible like negotiation and contract in private affairs must be found. Here is the most important place for study by western agricultural economists concerned with this federal land problem. The make-up, organizational setting, and limits to the area of decision open to this agency is a problem to be worked out; the extent to which its actions must be circumscribed by legislative direction must be determined. This *or some other more fruitful device must* be constructed. A means to resolve the conflict between administering agencies and private users of western federal land *must* be found if private use of federal resources in the West is ever to be anything but a ceaseless bickering in a political arena.

DISCUSSION*

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For a few moments I should like to comment on one of the issues raised in the paper we have just heard—whether federal lands in the West can or should be passed into private ownership. Professor Kelso's analysis seems to me an entirely reasonable statement of general policy. If the land is not used or needed for a specific public purpose, if it is physically capable of division into individual units, if there is no serious multiple-use conflict which must be policed by public authority, if the land is economically capable of paying its own way in private ownership—if these four conditions are satisfied, there is no valid reason for insisting on continued federal ownership.

There is, however, a rather powerful movement at present to open up these lands to private purchase. Discussion of the pros and cons of public ownership cannot remain long on a theoretical plane; they very quickly involve decisions about specific tracts of land. We can fairly easily agree on the general conditions favorable to private ownership; then the question almost immediately becomes whether a particular tract of land meets those conditions.

What impresses me is that these criteria we have established would be very difficult to apply in specific cases. The matter of public and multiple-use values is an instance. In the case of the national parks and forests, that issue is fairly clear-cut . . . but how about the rangeland administered under the Taylor grazing act? That land was formerly the "unappropriated and unreserved" public domain. It was not selected by homesteaders, but neither was it selected for public ownership. It is a residual. Its federal ownership is an historical accident. Much of this land, furthermore, is very similar physically to the adjoining private lands. Can an advocate of public ownership be very convincing when he argues that multiple-use considerations are enough to justify keeping this land in public hands?

Or take the question of whether the land will bear the costs of private ownership. The federal range is generally of low productivity to begin with. In addition, over the decades of free use much of the value of this land was capitalized into privately-owned base properties. There is a good argument for a free grant to land-users, or for sale at a nominal price, possibly on a long-term sales contract at a low interest rate. In any case it is unlikely that the cost of the land would be high. The principal question is whether the land would pay the taxes assessed under private ownership. Here again the advocate of public ownership would have trouble making his case. The potential buyer—probably the present land-user—would maintain, of course, that the land will pay taxes. The burden of proof is on the man who says it will not. That man will be handicapped by the fact that, in many cases, we simply do not know for sure. Then, too, he is in the

* A discussion presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 8, 1947.

awkward position of opposing our national tradition of private ownership of agricultural resources. And the decision will probably be made in times like the present—when a series of wet years and high prices have conditioned our judgment. My guess is that most juries would decide in favor of the private operator.

The point I am trying to make is that these criteria which we have accepted may be excellent reasons for not selling federal land. At the same time, against determined opposition, they may be rather ineffectual in keeping land in public ownership. They can be theoretically sound principles and still have little real meaning when they are translated into administrative determinations. In a wide area of decision, the verdict on a specific tract will still depend on opinion, and there is no guarantee that it will be the right decision. Under present circumstances, I am inclined to think that a sales amendment to the Taylor grazing act might result in a good deal of unwise alienation.

In these marginal cases—these debatable decisions—would it be more of a mistake to pass land into private ownership than to keep it in federal ownership? I think it would, for a reason that is by-passed in the debate over federal vs. private ownership. Once in private hands, if the drouth and distress of the 1930's should be repeated, the land might again pass into public ownership—but this time to the counties. By and large, federal land administration has been reasonably satisfactory. If the federal agencies have not all been spectacularly adept in public land management, the states and counties have been less so. We may prefer private ownership to federal, but I take it that we would choose a permanent federal land ownership to the uncertainties of what we used to call the "new" public domain.

The process of alienation from federal ownership is a one-way street. Once land is sold or given to private owners, it will never return to federal ownership—unless we buy it all back. The land is now federally owned. There is much room for improvement in federal land management, but at least we still have the opportunity to make that improvement.

My point is that the issue of federal ownership vs. private ownership is not a simple either-or decision. There is no way of being sure that land will remain in private ownership. The only thing we can decide is whether or not it will remain in federal ownership. In deciding against federal ownership, we must recognize the possibility that we may be deciding in favor of another—and less desirable—form of public ownership.

DISCUSSION*

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Conservation of our land resources has been given rather general support by most of the farm groups as well as by many enthusiastic nonfarm groups. Likewise support for conservation comes from individuals with a wide range of political and social philosophies. Witness the writings of Ward

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Shepard, Arthur Moore, and Louis Bromfield. In fact, conservation has been something of a religion. It is like love, truth and providence. One is either for it or is written off the books as a bad person. I suspect that part of this general support for conservation results from the widely divergent meaning the term has to different people. The range in meanings is wide enough to allow (1) for orderly disinvestment of soils and (2) for tremendous investments in soil and water. The common thread of meaning can hardly be reduced much farther than "wise use of resources." And, of course, few people would concede that the use of resources they propose is not wise. The wise use of resources (or as we have so often heard recently "best land use") is essentially a valuation (judgment) made by an individual or groups of individuals (government) as to which of several alternative methods of land utilization is most desirable.

The burden of Mr. Weitzell's paper seems to be to develop a procedure by which all of the factors entering into the valuation can be reduced to monetary terms and by which the mathematics of marginal analysis can be used to determine the type and intensity of land use which would yield the greatest profit. Also the objectives indicate that the procedure would divide the benefits from improved land use between the farmer (firm) and society in such a way as to guide the development and operation of government conservation programs. The procedure seems to attempt the impossible. However, I am inclined to reserve judgment on this score until Mr. Weitzell has used the procedure to assist effectively in the decisions involved in the following situations:

(a) In southwestern Wisconsin the land is particularly susceptible to water erosion. The University and the United States Department of Agriculture recommend a system of "grassland farming"—so called because cropland is reduced to a minimum if not entirely eliminated. A farmer in the area must decide whether or not to shift to grassland farming. In most cases this shift involves major change in the livestock as well as crop enterprises.

(b) The Federal and interested local governments have received proposals to build several large multiple purpose dams across the Missouri River. Decisions have to be made as to (1) how much the governments can afford to invest in the proposals, (2) how much each of the governments should contribute and (3) how much of the cost should be allocated to electricity, flood control, navigation, and irrigation (some to be repaid and some not).

(c) A third might be added, namely, how much should PMA spend to give lime and fertilizer to individual farmers.

When I attempted to visualize the use of the procedure in connection with such specific situations as these, several questions developed.

1. The method Mr. Weitzell uses to measure benefits on a farm should provoke considerable disagreement. The favored alternative is " . . . measuring the increase in farm and forest production in physical units to be interpreted in terms of dollars, and in terms of the farm income through the budgeting process." I would suspect this alternative would require getting physical data on how many additional bushels of grain would result from

100 feet of terrace on a certain slope land and how many man and machinery hours are required to build the terrace. Then apply prices, get income, subtract cost of terrace, and add the difference to the expected income of the farm. In this calculation the yields of crops and pasture would primarily govern the value of the practice. Livestock enterprises would be practically omitted from the calculation. The alternative method suggested in the paper involved an estimate of total farm income with or without the practice. This seems to be the more desirable method since it takes into account the effect the practices will have on the other enterprises, particularly the livestock enterprises. Weitzell, however, discards this method because " . . . the job would be one of gathering basic data by cost account routes or periodic surveys." And, of course, this is not necessarily true. Farm management men use both the cost account route to get past experience or the budget to estimate the future. Both could be used in the analysis by Mr. Weitzell's procedure or the one he rejects.

2. I had difficulty following that portion of the paper dealing with the interest rates and their use in capitalizing streams of incomes and costs. Weitzell seemed to get into a rather embarrassing situation at one point. He weighs the advisability of using going rates of interest or the lower government rates. "Use of long-term Government interest rates, rather than private market rates, as a basis for discounts may be justified only on the basis of the social values involved." It seems to me that the lower government interest rates would be justifiably used as a subsidy. This is one method government might use to pay for social values expected. However, to use this lower rate in determining social values which in turn would justify still lower interest rates is something of a circle.

3. Weitzell recognizes that the procedure for determining social values is not well developed. However he seems to suggest placing monetary values on nearly all social values. Perhaps this is because marginal analysis works better with monetary values. The real question is whether or not it is possible to reduce most social values to monetary terms without being so arbitrary that the result will be meaningless. Perhaps we could make better use of our time by describing the alternatives for government action in whatever units they exist—death, foreclosure, inches of top soil 100 years hence, migration, hunger, war, etc. Our legislators and through them the people will place a monetary value soon enough when they decide how many dollars will be spent to straighten out a problem.

4. Each year our soil conservation programs come before Congress for appropriations. One important question is how much should the government invest and how much should be invested by individuals. The division of costs and benefits of a conservation program carried out on an individual farm is a particularly knotty problem as Mr. Dodd well knows by now. I had hoped the seventh of the papers dealing with private and public viewpoints would shed some light on this question. The concluding statement on the public-private discussion, however, illustrates that the discussion could not be used in this connection. " . . . the private and public viewpoints here described are not additive as separate segments of the evaluation process. Final evaluations should be based on one selected view-

point, which may be characterized as primarily private, primarily public."

5. Thus far we have made little progress in preventing the wide fluctuations in industrial activity. Decisions on the nature and amount of social investment should not be made without reference to the business conditions. Few alternative employment opportunities existed for the men and materials invested in conservation during the 1930's. The social cost of that investment was small. Since 1940 when the employment opportunities are abundant and resources are urgently needed we have used up our resources (disinvestment). This disinvestment was not seriously questioned when it was necessary to win wars or build urgently needed homes. Weitzell's paper gives weight to social valuation based on alternatives because of his emphasis on economics. However his attempt to place monetary values on social values, to measure value of practices from physical data, and search for normal price periods tend to discount the importance of the business cycle in the valuation process.

SOME CONSIDERATIONS IN BUILDING A CURRICULUM FOR AGRICULTURAL ECONOMICS MAJORS*

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AN examination of curricula for majors in agricultural economics at different institutions reveals considerable variation in requirements at both the undergraduate and graduate levels. In some cases a fairly rigid program of courses and prerequisites is required, while at others considerable flexibility is permitted. At some institutions rather narrow specialization is encouraged, whereas at others a broad general training is favored. These differences suggest some variation in over-all objectives, but they probably reflect, to an even greater extent, differences of opinion as to the means by which the objectives are to be reached.

The views of anyone who attempts to discuss this subject naturally are colored by his experiences with students and with certain specific curricula. Hence a certain amount of bias is to be expected, and this discussion will prove to be no exception.

In this paper I propose to discuss some considerations in building a curriculum for agricultural economics majors in general rather than specific terms. This will be disappointing to those who would like to have the entire curriculum or curricula spelled out in detail including specific courses, course sequences, prerequisites and the like. But I believe the discussion will be much more fruitful if we consider general principles rather than run the danger of getting lost in a maze of detail and perhaps of losing sight of the main objectives or of confusing means with the ends sought. If reasonable agreement can be reached on the objectives, fewer differences will arise over the means.

The first step in this discussion, therefore, will be to indicate the kind of training that appears to be desirable for the well-trained major in agricultural economics. This will be followed by an attempt to determine, within rather broad limits, how much of the desired training can or should be obtained at the different educational levels.

It is obvious that the major in agricultural economics should be an economist. To be a well-trained economist he must have a

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thorough grounding in principles of economics. This is much more important than the number of applied courses in a given field.

The agricultural economist also should have a thorough grounding in the application of economic principles to agriculture. This means that he should have a working knowledge of and keep in contact with the various technical agricultural lines. He will be working with farm people and, hence, should be at home in such an environment. I would be the last to assert that a farm background is essential to success in this field. But I am convinced that it is an asset of incalculable value. Those without this background will have to put forth special effort to acquire the equivalent of this experience. Some are able to do this quite successfully, some with a fair degree of success, while others seem to be unable to make the grade. The classic example of the eastern city owner of a western sheep ranch ordering his manager over the telephone to "stop lambing" in the midst of the lambing season because lamb and wool prices had declined below production and marketing costs is a case in point. Older members of our group may recall the suggestion made at a farm meeting a couple of decades ago when mule prices were high that farmers should breed their mules to increase the number of work animals. I fail to see how one can talk intelligently about farm problems without a good understanding of farm work and farm life. By the same token, I do not see how one can expect to offer constructive suggestions for improvements in the marketing or in the distribution of farm products without a good working knowledge of marketing and distribution procedures.

It is of increasing importance for majors in agricultural economics to acquaint themselves with the framework of social and political institutions within which man must conduct his economic activities. Courses in fields such as psychology, sociology, political science, and constitutional law will provide some of the needed background.

World problems are now of such paramount importance to agriculture and to agricultural policy in the United States that well-trained majors in agricultural economics should have a reasonable understanding of our relationship to the rest of the world. The fundamentals of comparative advantage, foreign exchange, and other aspects of international trade have been stressed for many years, but recent developments have thrown these and other related problems into sharper focus than ever before. How can the United

States make its greatest contribution towards raising the living standards of the people of the world? Can this be accomplished by reducing trade restrictions, relaxing immigration barriers, exporting industrial equipment, investing in foreign plants, supplying relief to the needy, sending educators and technicians abroad to train others, or by doing any combination of these or of a dozen and one other things that have been suggested from time to time? This country will be obliged to reach decisions with respect to these and other matters, and these decisions should not be made upon the basis of narrow individual or group interest. Agricultural economists will be called upon increasingly to supply the kind of information that will enable an enlightened public to formulate sound national policies. Majors in agricultural economics should be equipped to make their contribution on this rapidly expanding front. This means that they should have some knowledge of the geography, soil, climate and other resources and of the people and their problems in the various countries of the world.

The agricultural economics major should be able to write and speak effectively. I am not contending that this is the only field in which these skills are desirable, but I do know that they are urgently needed by those who attempt to convey ideas to others. Facility of expression is desirable in the exposition of even the simplest ideas, and it becomes increasingly important as the ideas increase in complexity. It has the added merit of conserving the time of the one who is attempting to convey ideas to others. There are, of course, instances where preparation along these lines leads to a studied use of unusual words, or of peculiar sentence structure, or both. This is fatal to the conveying of ideas to all but a limited few who are familiar with the jargon of the author. The effective speaker or writer is one who has the happy faculty of presenting even complex ideas in relatively simple language. Training in the use of the written and spoken word should be included in the program of all agricultural economics majors.

In addition to the specific fields of learning which have been mentioned, the well-trained agricultural economist should have an adequate foundation in the natural sciences and in social sciences other than his major. In short, he should be a well-educated man, in every sense of the word, capable of effective citizenship in addition to special proficiency in his chosen field.

Some may say that I am expecting the impossible, that students

simply do not have the time for adequate training in so many fields of learning. I readily agree that this cannot be accomplished at the level of the bachelor's degree. Nor can it be accomplished in full at the level of the master's degree, or probably in many, if not most cases, even upon completion of the doctor's degree. What I have attempted to set up is an objective for our best-trained agricultural economists. I believe that is is not too far beyond the reach of those who lay their plans carefully from the time they enter college as freshmen until they complete the work for the Ph.D. Those who do not decide, until later on in their educational careers, to continue through to the Ph.D. may fall somewhat short of the ideal, and this probably will include, at least for some time to come, most of our candidates for the highest degree.

If it can be assumed that these are some of the more important objectives to be kept in mind in building a curriculum for agricultural economics majors, the next step is to determine what and how much of the desired training can or should be incorporated in the program at each educational level.

The mere recounting of the various fields of learning that would be useful to the agricultural economist suggests certain rather definite limits to the amount of specialization that is possible or advisable in the major field during the four year undergraduate course.

At many institutions the undergraduate students who wish to major in agricultural economics fall into three groups: Those who will complete their formal training with the bachelor's degree, those who will continue through the master's degree, and those who will go on for the Ph.D. The desired amount of concentration in the major at the undergraduate level will be different for each group, and it will also be different for individuals within each group because of variations in background and individual interests.

Relatively little time should be devoted to specialization at the undergraduate level for students who plan to continue through the Ph.D. Their time should be devoted largely to obtaining a good background in the natural sciences, in technical agriculture, in principles of economics, and in social sciences other than the major and minor. They should take sufficient work in English and public speaking to be reasonably effective in these lines, and they should have a satisfactory background in mathematics and statistics. Those who are to devote their time to research in prices or statistics

should obtain all the mathematical background and statistical training they can get. The general run of students majoring in agricultural economics should have enough contact with statistics to know how to use them and to realize their limitations. They should know that statistics are extremely valuable tools but that they are not a substitute for analysis. Some knowledge of the geography of the continents of the world also is highly desirable. This broad training will leave relatively little time for specialization. Somewhat more time for concentration in the major field will be available to those who enter college with satisfactory farm experience and with good high school preparation in such subjects as English and mathematics, than for those who enter with greater deficiencies in these areas.

A somewhat higher degree of specialization at the undergraduate level is desirable for those who complete their training with the master's degree than for those who go on to the Ph.D., and still greater concentration in the major field will be necessary for those who go no further than the bachelor's degree. At most institutions the latter probably includes most of the undergraduate majors in agricultural economics, and, if so, it is here that the principle interest in curriculum building for undergraduates will be centered. If these men are to function as agricultural economists upon completion of the bachelor's degree, they must have sufficient training in the principles of economics and in agricultural economics to enable them to give a good account of themselves in the various jobs that will be available to them. Job opportunities for men with such training include county agent work, professional farm management, work with lending institutions and various kinds of commercial jobs. In building a curriculum for these students, a balance must be struck between the training to be offered in the major and in the other lines of work. I am of the opinion that most of the work during the freshman and sophomore years, at least, should be required to insure a broad foundation in chemistry, botany, entomology, zoology, bacteriology, mathematics, English, and some of the important branches of agriculture such as soils, agronomy, animal husbandry, dairy husbandry, poultry husbandry, horticulture, and agricultural engineering. A good course in principles of economics also should be required during this period, preferaby during the sophomore year. Some students probably will be able to get most of the necessary training along these lines out of the way by the end of

the sophomore year, but more often some of it will be carried forward to the junior or even senior years. The background of the student will have an important bearing upon what and how much foundation work will be needed in fields other than the major and minor. Hence, a certain amount of flexibility is necessary at this point. By and large, I believe there is more danger of too much and too early specialization than there is of too little and too late specialization.

On the assumption that the work in the natural sciences, mathematics, and principles of economics and a considerable part of the work in technical agriculture and in English is completed during the first two years, the junior and senior years will be available for greater concentration in the major. One plan which appears to be fairly satisfactory is to allow the student to select a major and a minor combination but to require sufficient course work outside these fields to insure a well-rounded program.

In building the program for the undergraduate major in agricultural economics, care should be used with respect to prerequisites because of the limits of the four year program. For example, it usually is not practicable to require these students to take a course in principles of accounting before permitting them to take a course in farm accounting, or to take a beginning course in statistics before permitting them to take agricultural statistics. If too many prerequisites are required, the students may have little or no time left for work in the major field.

Furthermore, I believe that narrow specialization within the major field is undesirable at the undergraduate level for the great majority of our majors in agricultural economics.

Those who have had long teaching experience willl have in mind not one but many students whose interests changed sharply during the training period. In fact, it is common for the student's interest to change as new areas are explored. In such cases, early specialization would have been a serious mistake because it would have been made without adequate information. Then, too, many students do not obtain employment in or do not remain in the field which would have been their choice for narrow specialization. Students commonly enter the employment market shortly after completing the requirements for the degree. They are inclined to accept, from among the employment opportunities that are available to them at the time, the one that appears to offer the greatest possibilities and this

may or may not be in the field they would have selected for narrow specialization. Even if the student enters the narrow field of his first choice, he may subsequently be attracted, for financial or other reasons, to a position outside this field. Here again, a well-rounded program in agricultural economics would have been much more useful to the student than narrow specialization.

Undergraduate majors in agricultural economics who subsequently carry their training through to the master's degree can devote somewhat more time to the acquisition of a broad educational background and less to specialization in the major field during the four undergraduate years than those who complete their work with the bachelor's degree. For example, one who expects to devote his time to study of the economics of soil conservation may find it highly desirable to take some additional courses in soils or in agricultural engineering. More work in mathematics or in English may be desired. Here again, a certain amount of flexibility is desirable to accommodate the differences in background and interests of the students. At the same time, they should have sufficient foundation work in agricultural economics to proceed satisfactorily with graduate study.

The greater the amount of flexibility allowed to meet the requirements of individual students, the more important it becomes to supply competent faculty advisers. This probably is more important at the undergraduate than at the graduate level, although the difference is largely one of degree. The adviser must familiarize himself with the background of the student and of his special interests, and then assist in building a curriculum that best meets his particular needs. He should keep constantly in mind the desirability of a broad background outside the field of concentration, and, for most students, of a reasonably broad training rather than narrow specialization within the major field.

Requirements for the master's degree for majors in agricultural economics vary considerably from institution to institution. At the University of Minnesota, graduate students may qualify for the master's degree under either of two plans. Plan A calls for a minimum of 27 quarter credit hours of course work, of which two thirds should be in the major field of interest and one third in the minor, together with a master's thesis. Plan B calls for a minimum of 45 quarter credit hours of course work of which from 21 to 27 credit hours shall be in a single field of concentration, with 9 quarter

credits in the field of concentration or in related fields requiring written reports representing the quality but not the range of the master's thesis. Plan A is recommended for those who are not certain to go beyond the master's degree and who expect to engage in research work where they will be required to analyze data carefully and to present the results in satisfactory form. For many students who go no further than the master's degree, the extra course work together with the three term papers appear to be quite adequate. There is also some merit to the contention that students who continue through to the Ph.D., and hence will be required to present a Ph.D. thesis, will get more desirable training by substituting additional course work for the master's thesis.

All graduate students majoring in agricultural economics should have at least two quarters of advanced general economics and some work in economics of agricultural production. In addition to these courses, candidates for the doctorate should have at least two quarters of graduate seminar in economic theory.

While most of the time of the graduate student will be devoted to his major and minor fields, he should, except in unusual cases, be cautioned against specializing too narrowly. Concentration in a broad field is quite different from narrow specialization within that field. Reasons for avoiding narrow specialization on the part of the graduate student are much the same as those advanced previously for the undergraduate. His interests may change as he explores new fields or he may not find or accept, even if available, a job in the field of narrow specialization. The master's and doctor's theses offer sufficient opportunities for intensive specialization for most students.

Flexibility in the choice of courses is just as important at the graduate as at the undergraduate level. It is desirable because of sharp differences in background and in fields of interest. However, this flexibility should not be carried to the point of narrow specialization, but should meet the requirements of a broad training. Here is where the experienced adviser will be able to render invaluable service to the student.

It seems to me that the time has come for reexamination of the rigid foreign language requirements for advanced degrees in agricultural economics. One of the requirements for the Ph.D. at many universities and colleges has been a reading knowledge of two foreign languages, usually French and German, although a certai

amount of substitution of other languages is common. There probably were good and sufficient reasons for the language requirements when they were first adopted. We do not need to labor that point here. The question is whether the requirements should be continued in the years ahead. It is my opinion that relatively few agricultural economics majors who completed their training during the last decade or so have made use of either foreign language after the requirements for the degree were met. For the great majority, it involved the investment of a large amount of time and energy, from which they received little beyond the mental discipline involved in preparing for the examinations. It seems to me that much of this time could have been more profitably devoted to additional course work in the major, minor, or other fields. A particular foreign language is highly desirable for a student who will subsequently devote considerable time in the country in which that language prevails.

A particular foreign language also is desirable for students whose subsequent work carries them into fields in which much work is being carried forward and published in that language. However, these are exceptional rather than typical cases. Even though more of our graduate students probably will obtain employment abroad in the future than in the past, the great majority will continue to work in the United States, and their employment will be such that they will make little or no direct use of a foreign language. Furthermore, as we plan for the future, I feel certain that workers in a steadily increasing number of countries of the world will make contributions in the various branches of agricultural economics so that a reading knowledge of two foreign languages, regardless of the ones selected, will give the agricultural economics major access to a steadily decreasing proportion of the thinking of a world on the march. The only solution to this problem would be to require a reading knowledge of a steadily increasing number of languages, and that does not appear to be practical due to limitations of time.

I have heard many experienced agricultural economists who completed the requirements for the Ph.D. express the opinion that they should have taken more work in principles of economics, or in economic theory, or in mathematics and statistics, or in English and public speaking, or in other lines, but I have heard very few express regret that they did not devote more time to study of foreign languages. For these reasons, it seems to me that we could well afford

to use greater discretion with respect to the foreign language requirements.

A heavy responsibility rests upon the shoulders of the teacher who is engaged in the training of agricultural economists. The teacher's responsibility does not end with the exposure of the student to a specific course or courses. He should do something other than cram his students' minds full of facts and figures, and train them to become special pleaders for agriculture. His primary function is to stimulate the thinking and extend the mental horizon of his students. In short, the teacher should develop real men, men who can think clearly, and who put general welfare above narrow group or individual interest.

TRAINING AGRICULTURAL ECONOMISTS FOR PUBLIC CAREERS*

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AS I have tried to think my way through the subject of this discussion, I find myself digging into questions of methodology. My remarks, therefore, are not about courses, jobs, and the problems before the various agencies that support public careers for persons trained in agricultural economics. Instead I have attempted a presentation of some of the issues, the deeper issues as I understand them, which I have encountered as I have thought about training students in agricultural economics for public careers. Even if the outcome should be different from that which was originally anticipated when the program was projected—my only defense would be that methodology is all that can be taught students of economics anyhow.

The over-all question in my mind is how do we assist or stimulate a student to work out a viewpoint of his own. To me this is the essence of graduate work. I notice that some professional workers in agricultural economics get along reasonably well with a minimum amount of advanced training. But most people seem to need 3 to 5 years of graduate work in economics and related fields. But the critical point, I judge, is not the time spent but the viewpoint developed. How comprehensive the viewpoint needs to be, depends upon the work to be done; evidently it should be sufficiently broad to embrace the main issues in the work undertaken—to give comprehensive references for dealing with whatever problems fall within the range of the job. My own observations of the work of graduate students has led me to attach increasingly greater importance to the programs of undergraduate study. It is here that students establish their main reference points for dealing with later issues. For most students the day is too late to take background courses after they have enrolled in graduate schools.

I. *The Function of Agricultural Economists in Public Careers*

A Comment on Methodology

I believe we reasonably may classify the functions of agricultural economists in public careers as either educational or investigational

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 8, 1947.

—or if you prefer, teaching or research. I am unable to see any difference, in principle, between resident and extension teaching. The essential function of each is to supply facts and ideas to peopla to help them to be informed citizens and conduct their affairs in e responsible and intelligent way.

The agricultural economist as an investigator furnishes reliable generalizations of fact or principle. As investigator the economist may function in a research bureau or an action agency—but the function of investigation is not fundamentally different; what differs is the problem and possibly the objectivity and thoroughness. But investigators should be considered separately from administrators. The findings of investigators are a part of the resources of educators. Similarly these generalizations serve as ingredients for judgment of policy formation and administration.

In focusing primary attention upon the intellectual function of agricultural economists rather than upon the agencies or institutions and their problems in which economists may work, I am trying to achieve some simplification of our problem and at the same time set up the issues in a way which has some inherent relevance to a training program.

I have come to believe that the strategic questions in both teaching and research in economics are rooted in the nature and function of judgment. At least, I see clues here which may help me simplify the issues in advising students as well as in conducting my teaching and research work.

A judgment, as I understand the function, is a molding of idea and fact into a conclusion which is acted upon.[1] Any judgment has some theory, some ideas, as the major premise, and statements of fact for the minor premise. The major premise is, in scientific reasoning, a series of propositions, in principle the whole body of relevant theory. In common sense judgments the theory may not be articulated at all; rather the ideas are just accepted common sense. Similarly with facts; in carefully formulated judgments the facts are critically examined for relevance to the issue or problem at hand. Scientific facts are generalizations, arrived at through reliable inquiry. In common sense judgments the facts are particular to the immediate occasion. But within the whole gamut of judgment there is this separable function of idea and fact.

If this be accepted, tentatively at least, as a rough elementary

[1] John Dewey, *Logic, A Theory of Inquiry*, Henry Holt & Co., 1938 for ex. p. 323.

statement of the theory of judgment, some of the relations to education can be inferred readily. If we would actually instruct people, the ideas which operate in judgment formation are just as important as the facts used. The ideas, or the theory, establish the connections of relevance. In extension work, if we give farmers facts alone, it would seem that there would be great likelihood of misuse of fact and consequently faulty judgment. We must somehow permeate and improve, with reference to the point at issue, the common sense ideas about the situation.

In our teaching, following out this hypothesis, we would need to help develop students' systems of interpretative ideas as well as give them relevant facts. Actually, for a student I believe, it is more important to help him re-orient his thinking than to try to give him a whole bale of facts; if he can be taught the value and importance of accurate information and where such can be secured, we will have done our part of the educational task.

In sum, the suggestion here for our training programs, is that we train teachers by helping them see: (1) the nature of the judgment function, and (2) work out with them a body of theory and the requisite knowledge which they need to make their contribution to the judgment process. Our part of this task is to assimilate and, if possible, add to the relevant economic theory and related ideas, and the more important relevant generalizations of fact about the economics of agriculture, and help students master them.

To the extent that students enter a career of investigation, the methodology of research becomes essential. The development of research theory is a prerequisite to adequate findings of fact. But most investigators will no doubt concentrate on developing warranted generalizations of fact. Research in economics, as I visualize the task, requires a combination, on the theoretical side, of economics, statistics, and logic. Since most research in agricultural economics is done on a problem basis, research workers need to have a grasp of the theory of other social sciences as well. The point to be made here, however, is methodological. The findings of research in the factual side are generalizations of fact, which generalizations may be the ingredients of judgments in many different contexts according to the relevance of the findings of fact to problems and situations. This phase of the argument may be summarized by the observation that the research work in agricultural economics, like all scientific investigation, is intermediary and func-

tions through use in judgment, both in the educational process and in the resolution of practical problems.

Perhaps the essence of the matter for the training of students may be summarized by saying that it would seem that all students who expect to go into public careers in agricultural economics should have some clear cut ideas of the way in which education and investigation are related, and the way in which they operate in society. In my advising students, I have given more thought to the problems of training research workers. For students who have a bent in this direction, I usually advise two years of work in mathematics and one year of work in logic, as well as a considerable amount of work in general economics, as a part of their undergraduate course work. This should give a basis for both graduate work in economics and for comprehending the main issues in research theory and statistics.

I have tried to suggest that we need to take account in our training programs of the fact that social affairs in a democracy move forward on the judgments of people in all the various positions in society—head of a business, citizen, public administrator, etc. Furthermore, an awareness of the diversity of issue and perspective in judgment needs to be developed in our students. If facts are supplied people to improve their judgments, these generalizations of fact need to be formulated in such a way as to have inherent relevance to the problem at hand. A market administrator operates in a different perspective than does a dairy firm or a producing farmer in the market regulated. By the same token, the nature of judgment should serve as a warning against exclusive reliance on facts in an educational program. Where the facts are allowed to speak for themselves, they speak through some unuttered theory. This is an invitation to prejudice. Where education or advice runs solely in terms of ideas or theories without correlative fact, it invites construction of Utopias or the reverse; it is through judgment that theory and fact are harnessed together in dealing with social affairs. An awareness of this point seems to me to be the beginning of wisdom for those who would follow responsible public careers in agricultural economics.

II. *Agricultural Economics among the Sciences of Agriculture*

Most of us who teach courses in agricultural economics are in colleges of agriculture; these same institutions are the principal

source of our graduate students. Also, much of our research work involves close association, if not collaboration, with investigators in the other departments of the college. In view of all these associations, I find it rather puzzling that so little systematic attention has been given to the problem of the relation between the physical and the social sciences of agriculture. In almost every aspect of the economics of agriculture, the economic is closely involved with the technological—in farm management, in soil conservation analysis, in marketing and processing, and in many more. It seems to me that we need to go further than the conventional answers such as: agronomy tells us how to grow crops—economics analysis tells us which crop to grow; or, economics accepts the technological processes as given and is concerned with operating costs and returns. We have had such insights for a long time, but there is widespread confusion and even distrust between workers in agricultural economics and what we may variously call the technological fields or the physical sciences.

This relationship of the social and the physical sciences seems to me to present some of our really urgent problems in training students for public careers in agricultural economics. As I have thought about it, three or four issues appear to be of major importance.

First, I remind myself that economic analysis centers fundamentally upon the activities of valuation and organization. Economic activity centers in the field of choice, a volitional activity.

Second, physical things are caught up into social activity as uses, not as things. We economists are not concerned with the physical properties of things, except as these properties influence the uses, or usefulness of things. Fundamentally, we value the uses and devise practices for systematizing or organizing our activities with reference to these uses.

Third, the distinction between physical and social is essentially a polar one, a matter of degree, not a simple dichotomy. The most pervasively social is the concrete immediate situation of use and enjoyment; the physical is essentially the abstract, in which qualities of immediate usefulness are ignored. The same distinction can be made in terms of volition: the range is from the act of choosing (volition)—of pure choice, as found in economic theory—to the completely non-volitional involvement of physical interactions.

Actually, it now seems to me, most of the scientific work in agri-

cultural institutions is somewhere in the scale between the two poles, call them either social and physical, or volitional and non-volitional. I am unable to conceive of the social existing wholly apart from the physical; nor can I conceive of the physical as wholly abstracted from purpose and possible use in some social context.

Following out these ideas, the bridges between the physical and the social, between the non-volitional and the volitional, appear to be the uses and practices. As physical scientists move in their thinking from considerations of the interaction of physical processes to questions of possible use and value, they move toward social science. Conversely, as economists move out from considerations of value and organization toward analysis of physical interactions, they take on the function of physical scientists. Therefore, our husbandry, agronomy, and soils departments, for example, would not in this classification be considered as applied physical science alone, but rather as intermediary between physical and social. Similarly, much of agricultural economics is also intermediary on this scale.

It may be evident perhaps that what is here attempted is a conceptualization of the similarities which may unite as well as the differences which now divide physical from social sciences in agriculture. I do not see how investigators beginning at either end of the scale of volitional-non-volitional activity could ever cover the whole span. If so, this means that much of our research should actually be conducted jointly. If this were to be done, there would surely have to be some understanding of the common ground between present specialists. Furthermore, the need for collaboration is greatly increased by the prospect of increased funds for marketing research, with marketing conceived broadly enough to include the processing of farm products. All these tasks are reflected back to us in the graduate centers of study in the need for trained workers. There is already a considerable demand for men trained in a combination of economics, with soils, poultry, dairy manufacturing or horticulture. I do not see that it is possible to give graduate work leading to a genuine joint degree in agricultural economics and a sister department unless we have some general theory embracing the crucial issues in the fields of study of both departments.

III. *Supplementary Training in Other Social Sciences*

We have an unusual opportunity in agricultural economics to join in an experiment for the integration of the social sciences. Our

field of concentration has developed out of a study of problems; and in problem solution we follow out the requirements of the case rather than confine our efforts within the limits of any clearly marked out academic discipline. For example, an analysis of efficiency in the operation of a farm leads us, when acted upon, to a study of the structure and composition of the farm family, and into the property relations of land tenure; or perhaps into a consideration of public programs of conservation and ultimately into social psychology and public administration. There is, of course, a considerable division of labor in these studies, but the point is that the resolution of problems leads that way.

As I see it, intensive training in general economics is essential for all students of agricultural economics, but the work in the other social sciences must be more selective according to the prospective needs of the student. For undergraduate majors, I prefer that they get at least an introductory course in several fields among political science, history, philosophy, sociology, geography, and some advanced courses in at least two of them. This is essentially a preparation for intelligent citizenship and perspective on the nature of social affairs. But for graduate students the supplementary fields must be picked very discriminatingly; the student's time is too valuable for much exploratory study.

As I visualize the fields for possible public careers in agricultural economics, I see the work in both teaching and research on a scale between the two polar positions of public and private. Students who are likely to concentrate on those private aspects of economics are less in need of extensive graduate work in the other social sciences than are students whose careers involve analyses of public problems. Many workers in agricultural economics will be needed in public careers who are experts in the economics of private firms—farms, marketing or credit institutions, etc. These persons need to know technology and accounting, for example, as supplements to their skills in economic analysis. They will be experts on private economics with public careers. There is also an intermediate function, that of providing reliable crop and market information which is useful to both private business operators and public servants. But there is a third group, at least, whose function would be to analyze the essentially public economic relations. These people would not be concerned with private money-making, but with the general conditions under which the businesses of farming, agricultural marketing, etc. are conducted. It is this latter group of

workers in agricultural economics who need most a wide general training in social science in their graduate careers.

In my own advisory work I am feeling my way on the questions of supplementary work in social sciences. But I favor strongly work in public administration for students who are likely to have administrative responsibility in the development of agricultural economics or in public control programs. This applies especially to foreign students who are preparing to return to their native lands to help establish the work there. Sociology is essential for students whose work will take them into analyses closely related to the family, as studies of tenure and farm labor. To give a foundation for analysis of public policy, we should have some fundamental grounding in the theory of valuation through the study of social ethics and certain aspects of jurisprudence, if such courses can be found. Work in law appears to be virtually necessary for anyone whose work will take him into analyses involving property relations in the public perspective, as tenure and credit policy.

These remarks on supplementary courses are only suggestions at best; but as I make these references I am haunted by one overshadowing question. How far can students go in integrating their work in economics into other social sciences unless we as faculty members in the several departments actually understand the connections between the disciplines. If we cannot integrate the fields, can they? It is not enough to send our students into a succession of classes in the various social disciplines. This theoretical integration remains to be done, as far as I can see, and this can be our opportunity; cannot our problem approach be turned into a vehicle of unification? I think it can.

Reference was made above to the need for all students of agricultural economics to study general economics. I accept the general principle that if one would be an agricultural economist, he must first be an economist. This means a great deal of concentration on general economics including economic theory. In view of the evident fact that our economy is becoming more and more industrialized, our students need to understand a great deal about corporations, labor economics, competitive and monopolistic price theory, monetary theory, fiscal policy, and international trade. How many of these can be crowded into a graduate program presents a problem with every student. But I find this problem less difficult for students than securing an adequate comprehension of relevant eco-

nomic theory. General economics is no longer bound together by any widely accepted core of doctrines serving the function in this respect of the value and distribution theory of 40 years ago.

Furthermore, the creative work in theory is being done at the frontiers of economic adjustment in our unstable industrial economy. Our devotion to problems leads us in agricultural economics to work on problems which involve more interrelations with other social sciences than most work in economics requires. The close association with public programs of various kinds requires that we actually analyze the very structure of society much more than is done implicitly in the usual courses on price theory, etc. The result is that our students may not find their particular fields of work embraced in any meaningful way in the general economic theory which they study. As a constructive suggestion on this point it seems to me that we in agricultural economics who accept the proposition that agricultural economists must also be general economists have two alternatives: either accept economic theory as it is taught as the basis reference point, or extend our own thinking into the domain of general theory as a supplement to round out a relevant general theory. I believe the latter is the more feasible alternative at this time.

IV. *A Comment on Prospective Issues*

Events of the recent past have raised several questions about the future of a public career in agricultural economics. As have I talked to persons in the Federal service, I have sensed a deep uneasiness about the possibility of fundamental work in broad economic and policy issues. It is possible that we are going through a fundamental adjustment on the whole conception of the functions of social scientists generally in the Federal service. I feel compelled to note these occurrences, but I must also confess that I have not been able to work out any systematic and satisfactory interpretation of them. In concluding this paper, therefore, I shall make a few more or less random comments on the situations which seem to me to present issues in a training program.

Our work in agricultural economics has grown from work on problems, problems of farm people. This I consider a fortunate circumstance. But it has had some drawbacks. For one thing, this problem approach is readily converted into a "service" function. Farmers and their organizations have brought their problems to us, and

these needs have been so immediate and pervasive that too many of us, I fear, have spent our time at these tasks. The results have been twofold: (1) that our work has tended to be evaluated by its contribution to the service of immediate problems, and (2) that we have not as a group got around to generalizing very many of our investigations into genuinely objective and fundamental research investigations.

The balance of power and importance in our economy is shifting away from agriculture. Agricultural economics was conceived as a field of concentration by young men who were reared in the Granger days of the last century. Our association was formed at the close of the last war. For some 20 years subsequent thereto we spent a great deal of effort trying to re-establish a degree of prosperity to agriculture which presumably prevailed before World War I. Our debates 15 to 25 years ago over whether agriculture was the foundation of national prosperity point to the same general conception of a nation with a rural foundation. We emerged from World War II an industrial and urbanized nation, with our public debates centering on full employment, investment, international trade and fund balances, etc. We are getting, I believe, a reflection of this shift toward an urban economy in our congressional debates and policies and appropriations for agriculture.

When this latter point is taken in conjunction with the considerations of the shift in power within our political and economic system generally, we see that we may actually be facing a situation in which our work may be re-evaluated on the scale of public value. The service-problem approach may lead us into working primarily or even exclusively upon the essentially private problems of farmers and their organizations. Work on private problems, especially where the work is done on representative general problems, is laudable enough. But due to changes in the over-all structure of the economy, the farmer interests are inescapably caught up in this complex of collective action in the 20th Century. By too close attention to day-by-day problems we may be failing farm people at the points of greatest need.

If students are to be trained in ways that will help them do fundamental research on the relations of agriculture to these basic conflicts and to public actions upon them, they need some conceptions which sustain them in critical moments and which help direct their attention to positive courses of action. They will be called upon for suggestions about how something constructive can be

done to lead to the conciliation of conflicts and to creative public action. This requires comprehensive work in social science, supplementing economics, especially on the procedural side, as in law and public administration. But I am troubled at this juncture by the realization that much of our training in the theoretical aspects of economics in recent decades has not really led to a constructive philosophy regarding action within an on-going society. I am thinking at the moment of the cynical doctrine that economics is after all simply a method of analysis designed to maximize the effectiveness with which scarce means are used to achieve given ends under given conditions of technology, wants, etc. The doctrine is cynical in the effectiveness with which it clothes the holder of this view with rationalization for irresponsibility in the face of urgent social circumstances. Such a view would not only fail to give the devotees of the doctrines any real support to think courageously on dangerous issues, it may also serve as a perfect rationalization for accepting a strictly "service" viewpoint in work on economic problems of agriculture.

The emergence of action agencies (administrative commissions) as an instrument of economic adjustment also presents issues which students of agricultural economics may well consider. There appears to be fundamental differences in the way in which private and public interests are related in the administrative and legislative processes. Legislation is achieved by coalitions of interests to form a majority vote. Actually, therefore, it is virtually impossible in a democracy that legislation favorable to one interest group can be passed without active support of that interest. Yet, once the law reaches the administrative level it cannot be executed as the private property of that particular interest group. To put the matter more specifically, farm legislation can only be achieved by farmer-support: but the legislation cannot be administered solely to promote the farmers' interest. The public objective of price support programs cannot be simply higher prices for farmers; there must be some public problem created by low farm prices to justify price supports above levels otherwise prevailing. This leads to confusion, if not consternation, among pressure groups which have mastered the techniques of legislative lobbying. But both the theoretical argument and the evidence from experience lead to the conclusion that unless programs are really administered in the public interest they wither up.

This has a bearing on the future directions of careers in agricul-

tural economics. The Department of Agriculture has been entrusted with many administrative programs; yet if these were to be run simply by farmers' advocates for farmers' advantage, public support for them will surely be withdrawn—and we should expect the Department of Agriculture to wither up as has the Department of Labor. These issues tie back, then, to the question of private-service to agriculture versus a public-service, and they seem to me to be equally applicable to the land grant colleges as well. For reasons previously indicated it seems imperative that creative and fundamental research work be continued both at the state and national levels on the broad public issues in the economics of agriculture; this includes critical analysis of action programs, operating relations of farmers to corporations and labor unions, the significance of economic power and public controls, taxation, planning, etc.

I think we can accept any challenge which requires that work in agricultural economics serve the public interest. No group has more consistently served the public interest than agriculture, and no professional group that I know of has had a higher sense of public purpose than this one. But if we are to continue in the great tradition of creative and constructive social thinking to which we have been dedicated, our analysis must be broadened out to include the great questions of social organization in the emerging age of collective action.

TRAINING AGRICULTURAL ECONOMIC MAJORS FOR BUSINESS CAREERS*

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A COLLEGE course of study designed to train people for business careers should have two primary objectives in mind. The first should be to prepare the student to get a job upon completion of his formal training. The second should be to provide the student with a background which will enable him to advance as rapidly as possible in the business or occupation of his choice.

Every student should have something to sell when he asks for a job. Technical departments in colleges and universities have for years trained students in specialized fields so that they might enter a particular type of business or department of a business upon leaving school. While the market for such students has not always been assured, these students at least have had the advantage of having something to sell when the prospective employer asks "What can you do?"

Agricultural Economics courses, in the main, have prepared college students to enter several fields—farm organization and operation, business, and graduate study. Experience shows that this program has been very successful over the years. While the future market for graduates in farm management seems favorable, no one knows for how long departments may train and place graduate students to advantage at the present mass production rate. At least there is reason to believe that agricultural economics curricula should be broadened to provide specialized training which agricultural and related businesses can use to advantage.

A fundamental question may be raised at this point. What can an agricultural economics department contribute in training a student for a position in the dairy industry, the poultry industry, or the feed industry that a commodity department cannot do as well or better? Why should a dairy concern, for example, look to an agricultural economics department instead of a dairy department for a man? It is interesting to note that a large number of the executives in present day agricultural businesses are men who were trained in technical and not economic subject matter. The

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 8, 1947.

reason for this situation probably is that the technical department had the advantage of giving the student a "trade" to sell upon graduation. It was this "trade" which gave many business executives of today the start or toe-hold they needed in their respective concerns. Once they had a start, their ability, training, and experience enabled them to make progress toward positions of greater responsibility. If agricultural economics departments plan to train students for business careers, it seems imperative that they give the student something to sell when he leaves school.

When employers are looking for more than technical training then they hire a college trained man or woman. They want students who have a background of technical knowledge and some understandings of the technique of human relations. The "trade" will help them get the job but it takes more than that to make a person a success in his job. Very few men have lost jobs because they possessed too much technical information. Many have lost jobs, however, because they did not understand or did not practice the basic principles of living and working with people. The second responsibility, therefore, is to help students acquire a background which will help them make a success of their job. Most college curricula encourage students to sample courses in related and in non-related fields in order to broaden their understanding of social and economic problems. Students are also encouraged, but in too limited a way, to participate in various types of college activities. Such contacts serve to give students some understanding of their responsibility and their obligation to live and work with people with some degree of success. Colleges and universities probably make their most unsatisfactory contribution in the field of human relations.

Some persons will take exception to the order in which these two objectives are stated. The order is of minor importance. What is important, it seems to me, is to recognize the size of the job which needs to be done in the training program. Moreover, we need to develop in the student mind a professional attitude toward a business career. In this connection, I was interested in a statement made by Paul Garrett, Vice President of General Motors Corporation, when he addressed the graduating class of Whitman College this past June. Looking back at his graduation days he said, "To me at that time business was something you just drifted into if you were not competent to take up one of the recognized professions

or if all you wanted in life was money. It would not have occurred to me that an ambitious young man of ideals and vision might turn to industry for an ideal life profession."[1] Agricultural economists can take a cue from the medical, law, and engineering schools which have done so much to develop the professional attitude. Students should have no apology to make when choosing a business career.

The Market For Graduates in Agricultural Business Administration

Unfortunately, most college instructors know too little about the market for students trained in agricultural business administration. Further study is needed to sharpen the focus of courses planned in this area. Two markets for agricultural business administration trainees seem to stand out as holding considerable promise of immediate development. One is in the field of accounting, and the other is in the field of marketing and merchandising.

All business concerns require some accounting assistance. Not every one, of course, can afford to hire even a part-time accountant. There is reason to believe, however, that an accountant trained in agriculture may be preferred over an accountant trained in a regular business school if the prospective employer is an agricultural or related business concern. However, they undoubtedly will continue to select their accountants from regular schools of business. This may be the place where they should get them.

The rapid growth and competition of businesses which are trying to capture the farm market leads one to believe that men trained in marketing and merchandising could be placed to advantage. Most agricultural economics departments are already offering work in marketing. If this option is developed it would be desirable to broaden the plan of study to include courses in advertising, salesmanship, and merchandising. Most businesses can always use a good salesman, and larger businesses are frequently in the market for advertising, marketing, and merchandising specialists. Again, students trained in marketing and merchandising would have something to sell upon graduation.

Other fields of study which may be developed as the market

[1] Garret, Paul, "If I had Your Chance" an address delivered at the Eighty Eighth Commencement of Whitman College, Walla Walla, Washington, June 8, 1947.

permits are personnel administration, finance and credit, and business relations. It is not likely that a small agricultural business can afford to hire, or would need for that matter, a specialist in any one of the above fields. The small business likely will prefer a "jack of all trades" who has some specialty. Larger businesses, such as the meat packers and national dairy companies, may prefer students who have highly specialized training. Most of the graduates in agricultural business administration likely will be placed in small to medium sized agricultural businesses. In any case, the decision to hire or not to hire may depend more upon the individual than upon the degree of specialization.

Agricultural economics departments should not overlook the opportunity, in planning their curricula in agricultural business administration, to offer business training (service courses) to majors in technical or commodity departments of the college or university. When their graduates go into business, this training will help them materially as they are given management responsibility. Hence, an effort should be made to encourage commodity departments to add agricultural business administration courses in their plans of study.

In order to get a better picture of certain aspects of the market for students trained in agricultural business administration, I asked the executive secretary of each agricultural trade association in Indiana to send a special questionnaire to 25 of its leading members. Two other groups not in trade associations were also contacted, making eight groups in all which returned questionnaires. Ninety-five usuable replies were received from owners and executives-bankers, cooperative managers, dairymen, farm machinery dealers, feed dealers, food processors, poultrymen, and others in miscellaneous businesses. While the sample is small and should not be considered typical for all industries or states, the results do show what these leading Indiana businessmen rank from highest to least importance in hiring college students for careers leading to management responsibility in their particular businesses.

Businessmen were asked to rank the importance of 11 factors which would influence their decision when hiring college graduates for positions leading to management responsibility in their business. A summary of their opinions is shown in Table 1.[2] There was al-

[2] The ratings shown here are based on the simple averages of the ratings given each factor by the respondents. The factor receiving the lowest average rating was given the first rank and so on.

most a uniform choice among the business groups of character, ability to work with others, personality, and self confidence as the first four factors. Such factors as enthusiasm, attention to details, appearance, and business experience rank ahead of scholarship which was listed in ninth position. This rank is not a surprising one. It suggests that in the minds of many businessmen there is no necessary relation between scholarship and business success. No businessman will hire a man of sub-standard ability if he can help it.

TABLE 1. IMPORTANCE OF EMPLOYMENT FACTORS AS RATED BY 95 INDIANA BUSINESSMEN, BY INDUSTRY GROUP, 1947

Employment Factor	All Groups	Banking	Co-ops	Dairy	Farm Mach.	Feed Grain	Food Proc.	Miscellaneous	Poultry
Character	1	1	1	3	1	1	1	1	1
Ability to work with others	2	2	3	1	2	3	2	2	2
Personality	3	3	2	2	3	2	3	3	3
Self Confidence	4	5	4	4	5	5	4	4	4
Enthusiasm	5	8	5	5	4	4	5	6	6
Attention to Details	6	11	6	6	7	6	6	7	5
Appearance	7	4	8	7	6	8	10	5	10
Some Business Exper.	8	7	7	9	8	7	7	9	7
Scholarship	9	7	10	10	9	9	11	10	9
College Courses Taken	10	10	9	8	10	10	9	8	9
College Activity Background	11	9	11	11	11	11	8	11	11

However, he has learned from experience, apparently, that some students because of their youth and other factors attach more importance to social activities in college than they do to grades. As such students settle down on the job their natural ability gains a momentum which enables them to hold responsible positions in business organizations. The range among the business groups in rating enthusiasm and attention to details in fifth and sixth places was very narrow except for the bankers. This group rated the enthusiasm in eight position and attention to details in the last or eleventh position. Apparently, bankers feel that if they get an honest employee it is not too serious if he makes a few mistakes!

It is not until we get to item ten on this list that we find college courses taken. The fact that nine other factors are considered more important than the courses a student takes in college gives some support to the point made earlier that businessmen look for more than technical training when they hire a college graduate. This limited survey suggests that employers want students who primarily are able to live and work with people. Many employers feel that the graduate who will be hired should be trained in the business methods and techniques of the firm before he can progress in the business. Hence, many concerns provide elaborate training pro-

grams of their own for new personnel. For this reason they may be inclined to rate college courses lower than most professors would rate them. If we are to learn anything from this survey, it is that we need to build more human relations into our college curricula. If this is done we will come closer to training students who can adapt themselves more readily to the demands of the business profession.

All business groups rated a student's college activity background low, with six groups out of eight rating it last. This may mean that this question was not clearly understood. Although they rated this factor last, the businessmen contacted in the survey rated character, ability to work with others, personality, and self confidence as the four most important factors. Surely these four factors are recognized for their importance in any college activity. Too few instructors have a good idea of the college activities in which their students participate. This is unfortunate. The aggressive student will move out on his own. What is needed is a better planned program for the student who is reserved and less likely to participate in student activities without special encouragement.

An Adequate Training Program in Agricultural Business Administration

Although these Indiana businessmen rated college courses low in the list of employment factors, they did have some idea of the importance of 13 courses which might be offered in preparing college graduates for positions of management responsibility in their business.

All groups together rated economics the number one course (Table 2)[3] The range among the industry groups shows that four groups rated it first while the cooperative managers rated it eight. This suggests that these businessmen expect agricultural colleges to train students in the basic fundamentals of economics. It is interesting to note that salesmanship ranked second in importance. The dairy and farm machinery groups ranked it in first place while food processors ranked it eight. Selling is a very important phase of business as was indicated by the fact that all groups ranked it high in importance. This may indicate also that businessmen are in-

[3] The ratings shown here are based on the simple averages of the ratings given each factor by the respondents. The factor receiving the lowest average rating was given the first rank and so on.

terested in students who are trained in salesmanship. Accounting was rated third in the list of college courses. The range of rank for accounting was not as wide as for the first two courses, with feed dealers ranking it second and farm machinery dealers ranking it eighth. The rank it received also indicates that there is a possibility of placing students who are trained in accounting.

TABLE 2. IMPORTANCE OF COLLEGE COURSES AS RATED BY 95 INDIANA BUSINESSMEN, BY INDUSTRY GROUP, 1947

College Course	All Groups	Banking	Co-ops	Dairy	Farm Mach.	Feed & Grain	Food Proc.	Miscellaneous	Poultry
Economics	1	2	3	3	2	1	1	1	1
Salesmanship	2	4	2	1	1	3	8	3	4
Accounting	3	5	4	6	8	2	5	4	5
English	4	3	6	7	4	9	3	2	3
Public Speaking	5	8	5	4	4	10	6	5	2
Psychology	6	9	9	2	5	8	2	10	7
Finance	7	1	3	9	10	5	7	6	10
Mathematics	8	7	10	5	7	4	4	7	9
Credit	9	6	1	10	9	7	10	11	12
Marketing	10	12	7	8	11	6	13	8	6
Business Law	11	10	11	12	6	11	9	9	8
Sociology	12	11	12	11	13	13	12	13	13
Statistics	13	13	13	13	12	12	11	12	11

It was somewhat of a surprise to find English ranked fourth in the list of college courses. Apparently businessmen attach more importance to it than do most college instructors, other than English professors. An interesting sidelight on the importance of English was brought out in a section of the questionnaire which asked businessmen to indicate the importance which they attach to a college student having an ability to write well. Over one-half, 54 percent, felt that it was very important. Thirty-five percent rated it as important, and only 11 percent rated an ability to write well as helpful but not important (Table 3). Public speaking ranked fifth in importance, with the poultry industry placing it second and the feed industry ranking it tenth. Apparently, businessmen would like to see college students have some capacity for both writing and speaking. Perhaps all college instructors need to emphasize these two subjects more in the future than they have in the past.

Psychology was rated sixth in importance, with the dairy and the food processing industries ranking it in second place and the miscellaneous group ranking it in tenth place. Finance, mathematics and credit were placed seventh, eighth, and ninth, with a considerable range existing in both finance and credit. Bankers rated finance first in importance while farm machinery dealers and poultrymen ranked it tenth. It was interesting to note that cooperative

managers ranked credit in first place while the poultrymen ranked it twelfth. The feed and the food processing industries rated mathematics fourth but the cooperative managers rated it tenth in importance.

Marketing and business law ranked tenth and eleventh respectively. Feed dealers and poultrymen ranked marketing in sixth place, but the food processors ranked it last. This probably reflects the importance of the problem to the respective industries. Businessmen seemingly attach little importance to business law as a part of the kit of tools possessed by a college graduate. Farm machinery dealers rated it sixth while the dairymen rated it twelfth. Sociology and statistics were ranked twelfth and thirteenth. There was little variation among the different groups as to the place of these two subjects. Most businessmen probably see little tangible value in the study of sociology. It likely would rank with history and philosophy, both of which are important in providing a background, but which have little "sales" value. The fact that statistics was ranked last may reflect the little use made of it by individual business concerns. The principal data assembled in small businesses are accumulated through accounting records. It is not likely that much statistical technique is needed to prepare the average report used by a small business or analyze it for the use of management.

One problem in planning a course in agricultural business administration is to determine how much technical information in agriculture should be included. Indiana businessmen were asked to indicate how much technical training the graduate should have. Their replies were about equally divided between the belief that a student should have a minimum of one course in each subject matter field and the belief that technical training was helpful but not necessary (Table 3). Over half the feed dealers, the food processors, and the poultrymen felt that a general course (one subject in each commodity field) was desirable. Twenty-nine percent of the dairymen, 43 percent of the poultrymen, and 14 percent of the miscellaneous group felt that specialization in one field was needed. The cooperative managers, bankers, farm machinery dealers, feed dealers, and the food processors saw no need for specialization The majority of the bankers, cooperative managers and farm machinery dealers expressed the opinion that technical training in agriculture was not necessary.

Another factor that should be considered in setting up an ade-

quate training program and in gauging the market for graduates in agricultural business administration is the importance which businessmen attach to a farm background and to agricultural training. In other words, is the graduate of an agricultural economics department likely to be favored over the graduate of a business school, assuming that both are trained in comparable subject matter? A partial answer to this question was secured from the survey of Indiana businessmen. Only 26 percent of the businessmen felt that a farm background was essential for a position of management responsibility (Table 3). The range among those who thought

TABLE 3. IMPORTANCE OF SELECTED FACTORS IN THE EMPLOYMENT OF COLLEGE GRADUATES AS RATED BY 95 INDIANA BUSINESSMEN

Factor	All Groups	Banking	Co-ops	Dairy	Farm Mach.	Feed & Grain	Food Proc.	Miscellaneous	Poultry
	%	%	%	%	%	%	%	%	%
Ability to Write Well									
Very important	54	58	50	53	50	50	86	75	22
Important	35	33	32	27	50	50	—	25	67
Helpful	11	9	18	20	—	—	14	—	11
Technical Training									
General Course	44	46	45	36	23	63	57	43	57
Specialization	9	—	—	29	—	—	—	14	43
Not Necessary	47	54	55	35	77	37	43	43	—
Farm Background									
Essential	26	17	55	—	31	13	14	13	33
Desirable	62	58	45	64	62	75	71	87	67
Not Necessary	12	25	—	36	7	12	15	—	—
									%
Agricultural Training									
Essential	20	36	30	7	15	—	—	29	33
Desirable	72	46	70	87	85	100	57	71	56
Not Necessary	8	18	—	6	—	—	43	—	11

a farm background to be essential was from 13 percent in the feed and the miscellaneous groups to 55 percent for the cooperative managers. Almost two thirds, 62 percent, expressed the view that a farm background was desirable. Only 12 percent thought it was not needed. It was interesting to note that 36 percent of the dairymen reporting did not attach any importance to a farm background insofar as hiring a man for a position of management responsibility.

Agricultural training was considered essential by only 20 percent of the respondents. Neither the feed nor the food processing groups considered it essential for a management position in their businesses. Only seven percent of the dairymen considered it essential. On the other hand almost three-fourths, or 72 percent, of the businessmen felt that agricultural training was desirable. Only eight percent of the respondents felt that agricultural training was not necessary.

One might generalize from this survey (although a broader study is needed) that students trained in agricultural business administration will not have much of an advantage over students trained in regular business schools. At least there was no pronounced indication in this survey in Indiana that an agricultural background is a deciding factor. Other things being equal, the graduate in agricultural business administration may be favored. But one cannot be certain of this point.

Several factors should be considered in outlining an adequate training program in agricultural business administration. These are (1) arranging a course of study which will provide the necessary technical and non-technical information; (2) offering an integrated program which will lead to a better understanding of human relations; and (3) developing an in-service training program which will permit the student to accumulate some practical experience while he is pursuing his course of study. The difficult problem, of course, is to achieve the proper balance of all three factors.

There are many differences of opinion as to what should be included in any course of study. I have no illusion that any program which is recommended here will meet with universal acclaim. It is hoped that it will serve as a starting point which will lead to the development and acceptance of a practical program for training students in agricultural business administration. A course of study in this field will of necessity include many business administration courses. Agricultural economics departments should not attempt to offer these specialized courses if the college or university has a business school which can do the job. In some cases, however, it will be necessary in agricultural economics to add new staff members trained in accounting, selling, merchandising and the like.

A suggested four-year plan of study (on a semester basis) is shown in Table 4. The first two years of this program will cover the basic agricultural subjects as is presently the case with most agricultural economics curricula. The junior and senior years will be devoted chiefly to the study of agricultural economics, business administration, economics, and related courses. Thus, the last two years will enable the student to sharpen his training to the point where he will have something to sell upon leaving school. This plan of study is not all-inclusive. It is, perhaps, much too traditional. Each plan must necessarily be tailored to meet the situation at the Institution which adopts it. It would be desirable as

the training program develops to add courses in insurance, personnel administration, transportation, purchasing, etc. It is contemplated that accounting majors and marketing and merchandising majors will gain practical experience in their specialty through in-service training programs arranged in cooperation with industry.

The problem of building human relations into a training program is not an easy one to solve. Most curricula, and too many college

TABLE 4. PROPOSED PLAN OF STUDY FOR ACCOUNTING AND MARKETING AND MERCHANDISING OPTIONS IN AGRICULTURAL BUSINESS ADMINISTRATION

Freshman Year	
First Semester	*Credits*
Introduction to Agric. Econ.	3
Principles of Economics	3
Animal Husbandry	3
Poultry Husbandry	3
English composition	3
General Chemistry	3
Elective	3
	21
Second semester	
Principles of Economics	3
Dairy Husbandry	3
Agronomy	3
Horticulture	3
English composition	3
General chemistry	3
Elective	3
	21
Junior Year	
First Semester	
Cost Accounting	3
Money and Banking	3
Agricultural Marketing	3
Report Writing	3
Prin. of Salesmanship	3
Electives	6
	21
Second Semester	
Income Tax Accounting	3
Corporation Finance	3
Applied Salesmanship	3
Agricultural Statistics	3
Business Law	3
Electives	6
	21

Sophomore Year	
First Semester	*Credits*
Farm Management	3
Principles of Accounting	3
General Mathematics	3
Feeds and Feeding	3
Public Speaking	3
Electives	6
	21
Second Semester	
Principles of Accounting	3
Advanced Mathematics	3
Applied Psychology	3
Principles of Sociology	3
Economic History of the US	3
Electives	6
	21
Senior Year	
First Semester	
Agricultural Prices	3
Business Forecasting	3
Advertising	3
Business Letter Writing	3
Labor Problems	3
Electives	8
	21
Second Semester	
Merchandising	3
Agri. Cooperation	3
Market Research & Analysis	3
Prin. of Public Relations	3
Agri. Business Management	3
Electives	6
	21

instructors for that matter, have been overzealous in their efforts to cram facts down students' throats. The emphasis of most courses of study upon technical information is easily understood. Instructors are trained and work in specialized fields which encourages them to place a premium upon their individual courses. Only a few instructors have the chance to see the whole picture faced by a student unless the instructor serves as a student advisor or counselor. Then too, college instructors who divide their time between teaching and research may become over-balanced in their efforts to disseminate factual information. This criticism is not intended to discredit the teaching of factual information. It is hoped, however, that all instructors will recognize, and many of them do, that the problem of training students for business careers transcends the obvious objective of teaching facts and figures. The fact that 95 Indiana businessmen consider nine other factors more important than college courses in hiring college graduates for management positions suggests the need for more effective work in the field of human relations and personality development.

College instructors can have an important influence upon the character of individual students. They can help students acquire the technique of working with others. The whole set-up of college instruction works against the notion that students should work together. College work is put on an individual basis and any indication of collusion is promptly penalized. The realistic problem which the teacher faces is that there are always some students who do not contribute their share to a community study program. In order to penalize those who take "a free ride" the idea of cooperative work is abandoned. An effort should be made to plan problems on which students can work together. An alert instructor can find ample means to bring the careless student to task.

The least that we can do is to encourage students to participate in college activities—student clubs, debating, campus journalism, campus social programs, and student government to mention just a few. Perhaps agricultural economics departments should consider setting up activity programs for their students. It is possible that they might give some course credit to students who participate in them. The responsibility for arranging the activity program of individual students might be delegated to the various college instructors. This will assign the responsibility to someone to check up

periodically to see what progress the student is making in learning self confidence and the technique of working with others.

Many successful in-service training programs are being used by colleges and universities. Students are placed in business organizations, for example, during the summer months between their sophomore and junior years and/or between their junior and senior years. Such a program gives the student a chance to try out the profession toward which he is working. It also gives the business conecrn a chance to look over a prospective employee. The experience gained in actual business contacts enables the student to appreciate more fully what he needs to be a success in his business career. When he does get on the job this experience helps him to produce on the job at a more rapid rate.

College instructors also need to have personal contact with the agricultural and related industries which may hire men trained in agricultural business administration. For the most part, positions are filled on a personal basis. When an employer needs a man with a particular training, he will contact a personal friend in whose judgment he has confidence. If a canvass of his friends fails to uncover a desirable man, he will resort to blind requests of other sources where trained personnel may be found. It is one thing to train the student and quite another job to place him. This does not appear to be a problem at present, but the time will again come when there will be more than one trained man for a given position. Hence, it seems important for college instructors to be acquainted with the trade.

Conclusion

There seems to be a genuine opportunity to train students in agricultural business administration with options in accounting and in marketing and in merchandising. Other options may be added as the training program gains stature and as the need appears. The training program needs to offer enough technical business information to enable the student to get a job upon graduation. Yet it also needs to include some guidance to acquaint the student with the problems of human relations.

Much work needs to be done toward gathering information on the probable market for graduates in agricultural business administration. There is some reason to believe that the agricultural eco-

nomics graduate may not have much advantage over the business school graduate if an agricultural background is to be the deciding factor. Surveys should be made of employers and of former graduates to learn which courses they feel are most important in contributing to the success of men in business. A careful in-service training program should be planned to give the student practical experience in his specialty.

Moreover, we need to interest business organizations in the programs of agricultural economics departments which plan to train students for business careers. Businesses generally follow the practice of buying the items they need upon the basis of specifications. It would be most helpful if business organizations would suggest some "specifications" which colleges and universities might follow in training young men and women who desire to follow business careers. Colleges are handling a very valuable raw material when they accept the responsibility to train young men and women. There seems to be a mutual responsibility to make this training as effective as possible.

DISCUSSION*

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Divergence of opinion among Professor Wood's survey respondents on what business looks for in hiring a college man and on how he should be trained, brings out clearly that it will not be a simple job to train agricultural economics majors for business careers. My discussion is presented merely as that of another respondent, and likewise preliminary and inconclusive. However, I am glad that this subject is receiving some of the attention it deserves by this Association and am pleased to have a part in the discussion.

It seems to me that there are three fundamental ways in which agricultural economics training may fit college men for business careers.

One is training men for jobs in commercial research, mostly in the larger companies and trade associations. This really requires graduate work. It is not possible to give adequate general and technical training for such work without at least one year of graduate study. This is an expanding field and one which is gaining in service and reputation. Properly functioning commercial research departments are so close to the management of business that many heads are being given executive recognition in title and responsibility. A large number will rise to the top of their companies.

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 8, 1947.

Agricultural economics departments should develop this field fully and encourage students with outstanding personality, intelligence, initiative and farm background to prepare for comercial research work.

Another need for agricultural economics training in preparation for business careers is in providing technical or commodity students with a generous amount of economics. Professor Wood has mentioned this, and Table 2 from his survey points to the demand. In our agricultural colleges, I believe this type of agricultural economics training should have fully as much emphasis as major training in agricultural economics for business careers.

As a practical matter, it must be recognized that businesses hiring college graduates will always want many technical men, and that large numbers of these men will continue to rise to management positions. They need economic training for both its broadening value and the useful purpose it will serve in their advancement.

The third way in which agricultural economics training may fit college men for business careers is in the field which Professor Wood has discussed in detail. His objectives are commendable and he has made some splendid suggestions on how to train these men. I am inclined to feel, however, that Professor Wood may have somewhat over-rated the job that these graduates will usually obtain. Business in general does not hire a college graduate for the definite purpose of immediately becoming a young manager, or "third assistant to the president," even though the idea of his advancement eventually to a management position may be under consideration. Rather, business is more likely to hire a college graduate for a fairly definite assignment at or near the bottom of some phase of the company's operations —buying, selling, accounting, manufacturing, et cetera. So we are up against the usual problem of not knowing what specialized training to give because we do not know what job will be open or what job the fellow may finally decide to take. Professor Wood proposes to give him some of nearly everything, and I suppose this is about all that can be done except for the exceptional students who develop their objectives unusually early in their college years.

I do not agree with the respondents on statistics. In the first place I think of statistics primarily as a branch of mathematics. The study of mathematics is said to be unexcelled for the development of correctness of thinking and reasoning capacity. A course in statistics, however, should have enough practical application of mathematics to be useful to any graduate entering business. Probably he will never have occasion to calculate a correlation coefficient, but he likely will need to know how to handle data, aside from usual accounting routine, and how to make and read charts.

In almost any business job, character, personality, and ability to work with others is highly important—as reflected in the survey Professor Wood has made. We always look for these qualities. I wonder, however, if it may not be a bit confusing to rate these qualifications in comparison with such things as "Courses Taken" and "Scholarship" and then draw specific conclusions from the comparative ratings. We consider several things together in hiring a college man, and we are not satisfied without a good balance

and reasonable qualification in each. We size up the personality, we check the scholastic record, and we carefully consider the background of each applicant. We would be very hesitant to employ him if he were below average in any one of these.

It is hard for me to believe that a farm background carries as little weight in the employment of college men by agricultural business as Professor Wood infers from the survey. Of course this will vary with the job, but I observe that 88 percent said it was either desirable or essential whereas only 12 percent said it was not necessary. Only 53 percent thought technical training was needed. Again, somewhat more respondents thought a farm background was essential than thought agricultural training was essential, or 26 percent against 20 percent. Evidently a combination of a farm background and agricultural training are considered quite important. I believe they will give the graduate more advantage than Professor Wood appears to hope. At least I can assure you that a farm background and agricultural training are highly important to Wilson & Co. in any position involving livestock or dealing with farm folks directly or indirectly, which includes a great number of our employees.

Referring to Professor Wood's proposed plan of study again, I should like to raise one question, even though it may be of minor importance. One-fourth of the credits are elective, or 42 hours out of 168. I wonder particularly about the six hours of electives in the first year and as much as 12 hours in the second year. I should think in most cases the faculty would be in better position than the student to select somewhat more of the coursework than suggested in this program, particularly in the first two years.

I wish to endorse fully the emphasis given to inservice training. To be of maximum benefit, of course, it is necessary that the student make up his mind rather early on what he wants to do. This will in many cases require some persuasion and assistance, but it should be well worth the time and effort. Inservice training will have value even though the graduate finally takes another type of job, for it will nevertheless broaden his experience and should help him to get a better job and to make a quicker start.

Incidentally, some inservice training might not be out of place for the faculty that is going to be training these young men for business careers. I will mention a parallel situation in support of this suggestion. The ownership or actual management of farms by agricultural economics professors, which is fairly prevalent, must have had a very wholesome influence on the training of farm managers, which training Professor Wood in his paper has cited as "very successful over the years." Furthermore, if some of the proposed courses in business management are to be given by the agricultural economics department, careful consideration should be given to the development of a staff that has at least some business experience as well as an appropriate academic background. I believe that the students would benefit considerably, and be definitely stimulated, by association with faculty members who have been on the business "firing line."

There is one thing not mentioned by Professor Wood that must be done in training men for business careers. Unfortunately, there are enough in-

stances where it is not being done, so that we should not take for granted that it will be. I am sure Professor Wood will agree it is imperative that these students shall be led to believe in business, to have confidence in competition, to understand the contributions which business and industry have made in the progress of our nation. They must be instilled with the merits of our system of private enterprise rather than permeated with questions and reservations about this great heritage we have and must preserve.

Professor Wood properly emphasized the need for training students as much as possible in human relations and has made several suggestions that have real merit. For example, the courses proposed in psychology, sociology, salesmanship and labor and public relations should be very helpful to students being trained for any business position. Without detracting from his proposals, I should like to suggest, however, that this need above all should be a challenge to the individual instructor and professor, day by day. This is vitally needed and nothing can replace it, in my opinion. My choice of a career arose from the manner of presentation of my first course in agricultural economics, and my future was affected by the relationship that developed from that course. Charles Luckman, youthful President of Lever Bros. Co., expressed what I have in mind very clearly in his address last May when Dr. Stoddard was installed as President of the University of Illinois. Mr. Luckman said, "Those who participated in my education passed on to me a way of life, not merely a means of livelihood."

In closing, I want to commend Professor Wood on the thought he has given to this subject and the very helpful survey he has made. I feel sure agricultural economics departments can interest business in this program, but I believe it is reasonable to expect, and will be necessary, that they accept the responsibility and take the initiative in bringing specific problems to business. If this is done, I am confident they will receive good cooperation and many helpful suggestions.

ON THE REDEFINITION OF PARITY PRICE AND PARITY INCOME*[1]

I. *The Committee's Assignment*

THE assignment given to this Committee was to "study alternative ways of redefining parity prices and parity income to provide a more practicable and more equitable measure of equality for agriculture, and attempt to develop definitions or formulas that are economically sound and that could be put into actual operation."

This is a difficult assignment for a committee to carry out. The topic is one about which differences of opinion cannot be resolved solely by "appeal to facts." Equity, economic soundness, and practicability are objectives which have no precise connotation; nor are they necessarily consistent.

Whether a formula can be made operative depends not only on the technical possibility of computation and on administrative feasibility, but also on the measure of acceptance given by the groups affected and their political leaders. This acceptance will be conditioned by past experiences in the application of the parity concept, and by anticipations as to the nature of the economic situation with which the formula will be expected to cope. Any politically acceptable modification of the parity formula must recognize these conditions, and empirically, will be a compromise between different principles and viewpoints.

II. *Limitations of the Parity-Price Approach*

Members of this association are generally familiar with the weaknesses of the present parity-price formula. So much attention has been given the subject, in the *Journal of Farm Economics* and other publications, that it seems unnecessary to treat it in detail here. A brief statement should suffice.

Parity prices, as now computed, are particularly deficient in two respects: they prevent the adjustment of current consumption of the various agricultural products to existing supplies; and they hinder the maintenance of a good production balance within

* A report presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 8, 1947.

[1] Report of a Committee composed of R. J. Eggert, R. K. Froker, L. J. Norton, O. V. Wells, K. T. Wright, and H. R. Wellman (Chairman).
See O. V. Wells' dissenting comment.

agriculture. These deficiencies are inherent in the formula itself. The price relationships that prevailed in the base period are perpetuated in the current parity prices. No account is taken of the changes in the relative costs of producing the different agricultural commodities or of the changes in the relative demands for them which have occurred since the base period. For many commodities the base period is still 1910-1914, a third of a century ago.

Experience suggests that maintenance of market prices of agricultural products at or near their respective parity levels as now computed would sooner or later lead to the following adverse results:

1. Needed adjustments in agricultural production will be impeded; shifts in acreage of crops and number of livestock in accordance with changes in basic cost and demand conditions will be retarded; and production will tend to be maintained in high-cost areas and expansion of production curtailed in low-cost areas.
2. Commercial outlets, both domestic and foreign, will be restricted.
3. Excessive stocks of nonperishable commodities will be accumulated, and perishable commodities will be wasted.
4. Acreage allotments and marketing quotas will be re-established.
5. Substantial government subsidies to agriculture will be required during periods of national prosperity.

These adverse consequences would be lessened only as market prices were permitted to depart from parity.

Various proposals have been advanced for "modernizing" the parity-price formula. These proposals may be resolved into two classifications: (1) those which involve modifications in the parity-price index; and (2) those which would permit a gradual change in the temporal relationship among the parity prices of individual agricultural commodities.[2]

Modifications in the parity-price index which have been suggested include: (1) adding farm wage rates to the items included in the index; and (2) shifting the base period from 1910–1914 to a more recent date.

Legislation authorizing the inclusion of farm wage rates in the parity-price index has been introduced in Congress on several occasions. The weight proposed for this item was to be based on the imputed value of the labor performed by farm operators and

[2] Two other changes have also been suggested: (1) periodic revision of the weights assigned to the various items in the parity-price index; and (2) adjustment of current parity prices of crops for departures in national yields per acre from the average of the preceding ten years.

members of their families as well as on the expenditures for hired farm labor. There seems little justification for adding family labor, but the inclusion of hired labor would improve the accuracy of the index in measuring over-all changes in farm expenditures. Nevertheless, if farm wage rates should continue high in relation to the prices of articles farmers buy, as now seems probable, the adverse consequences of maintaining market prices at the resulting higher parities would be accentuated.[3]

Legislation has also been introduced in Congress providing that the base period for all commodities will be July 1, 1919 to June 30, 1929. One of the effects of this provision would be to lower the parity-price index and hence, the level of the sum total of parity prices by about 10 percent. The available evidence supports the thesis that this reduced level would typically have produced from 1933 to date, full parity income as officially defined.

Another effect of shifting the base period to 1919–1929 would have been an alteration of the relationship among the parity prices of individual agricultural commodities. But this modified relationship would have been inappropriate as a basis for government price supports in the early 1930's. A more suitable basis at that time would have been the 1925–1929 relationships. Today, however, even they are obsolete.

Since any base period tends to become outmoded, the adoption of a moving base period for determining the relative parity prices of individual agricultural commodities has been advocated.[4] This proposal would base the current parity price of each commodity upon its average price during the preceding five to ten years adjusted by the current parity-price ratio. Thus, the parity price level of combined agricultural products would be governed by the parity-price index, however it might be constructed, while the relationship among the parity prices of individual commodities would be determined by the relationship that prevailed among their actual average prices during the immediately preceding years.

If the moving-average device is to keep current parity-price relationships among individual commodities even roughly in line with

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[3] The inclusion of hired farm labor would have lowered somewhat the parity-price index from 1931 to 1940, but would have raised it markedly from 1942 to date.

[4] Albert S. Goss, Address before the 79th Annual Session of the National Grange, Kansas City, Missouri, November 14, 1945. "Legislative program of the National Grange." This JOURNAL, Vol. XXIX, No. 1, pp. 52–63. February. 1947.

differential trends in supply and demand conditions, two prerequisites must be fulfilled: (1) the preceding period during which the actual prices are averaged should be short; (2) and the market prices should be left free, or substantially so.

The first condition is necessary in order to minimize the lag between changes in supply and demand conditions and their subsequent reflection in current parity prices. Some lag is inevitable, but it will be minimized proportionately as the period is shortened. It is doubtful that the period should be longer than five or six years. Moreover, it should not include any of the war or immediate postwar years.

Free market prices are mandatory if trends in supply and demand conditions are to exert even a delayed influence on parity prices. If market prices of individual commodities were supported at or near their respective parity levels, the relationship among them would tend to become frozen. A moving base for individual commodities would be a substantial advantage over a fixed base only if market prices were free to fall below as well as rise above the computed parity prices. The effectiveness of this proposal, therefore, requires direct payments to producers in lieu of market-price supports as such.

If the only alternatives were retention of the present parity-price formula or modification of it, we would certainly favor the latter. In such modification we would employ not only a moving base period for determining the relationship among parity prices of the respective agricultural commodities, but also a shifting base period for the parity-price index itself. Its base period would be the most recent normal peacetime period in which national production and employment were at high levels. Together with this change we would favor the inclusion in the index of farm wage rates, weighted exclusively on the basis of expenditures for hired farm labor. Periodic revision should be made of the weights assigned to the various items in the index; the current parity prices of crops should reflect departures in national yield per acre from the average of the preceding ten years.

Modification or retention of the parity-price formula are not, however, the only alternatives. The majority of this committee believes that the parity price approach should be abandoned. The basic premises on which it rests are, we think fallacious. We do not subscribe to the proposition that "economic equality for agricul-

ture" is to be found through manipulation of the prices of individual agricultural products. Nor do we believe that the perpetuation of historical relationships between agricultural and nonagricultural prices, and among agricultural prices themselves, is in the long-run interest of farmers or of the nation.

III. *Improving the Competitive Market*

Under conditions of substantially full employment and high levels of national production and income, agricultural price policies should be directed primarily toward improving the operation of the competitive market. Considerable improvements are possible: increased efficiency in the physical distribution of products; more prompt adjustment of retail prices to wholesale prices; elimination of monopolistic practices of firms purchasing agricultural products; more effective regulation of trade practices; further improvements in grading, standardization, inspection, and in market news; development of a thoroughgoing outlook program, and an expanded program of education to promote good nutrition. All these would help make the prices of the free market serve better both farmers and consumers.[5]

In periods of severe and prolonged depressions farm incomes may need to be supplemented. The remainder of the report is devoted to this topic.

IV. *Income Supports in Depression*

Agricultural economists generally agree that income supports should be provided for agriculture during severe and prolonged depressions. While opinions among them differ regarding the kind of income supports that should be instituted, few question the need for doing something. Moreover, there is general agreement that such income supports as are undertaken should be in the form of direct payments to producers rather than manipulation of market prices.

In the agricultural price policy contest sponsored by this association several of the winners advocated special devices for depression

[5] The brief space devoted to improving the competitive market does not imply any lack of appreciation on the part of this Committee of the fundamental importance of such improvements. Rather, it implies that neither "parity price" nor "parity income" is a useful concept in achieving them.

conditions. Even those who made no explicit distinction between depression and nondepression conditions, suggested measures which would be operative mainly in depressions.[6]

The Land-Grant College report on *Postwar Agricultural Policy* contained the following statement:

> In the case of a long and severe depression, certain income payments to farmers as well as other groups may be advisable. . . . They should be outright payments designed to keep farms in productive condition, and to speed recovery by injecting additional money into the nation's income stream at a strategic place (page 28).

T. W. Schultz, in his book *Agriculture in an Unstable Economy*, expresses the view that:

> Business depressions are the main cause for the periodic drop in the general level of prices of farm products and in the income from farming, and . . . the maintenance of farm income is important, not only to check the deflation associated with a business depression, but to bring about recovery (page 223).

The desirability of providing income supports to farmers in depression was also recognized by the House Special Committee on Postwar Economic Policy and Planning. In its report on *Postwar Agricultural Policies* the committee declared "that in the past agriculture has borne an unequal share of the burden of a depression" (page 34), and recommended that consideration be given to "a system for cushioning declines in prices and income in the event of a business recession, by the use of price or income supports, or other devices" (page 40).

Some businessmen, too, find merit in the proposal for direct payments to alleviate the financial duress of farmers in time of depression. In its report on *Agriculture in an Expanding Economy* the CED's Research Committee of businessmen recommended that "current disagreements notwithstanding, continued study should be given to the use of supplemental payments to farmers . . . to offset a fall in consumer buying power" (page 29).

Two different proposals for supplementing farm incomes during a depression will now be examined: compensatory price payments and an over-all parity income approach.

[6] See: William H. Nicholls, and D. Gale Johnson. "The Farm Price Policy Awards, 1945: A Topical Digest of the Winning Essays." This JOURNAL, Vol. XXVIII, No. 1, pp. 267–293, February, 1946. Also, The eighteen winning essays, this JOURNAL, Vol. XXVII, No. 4, pp. 743–902, November, 1945.

V. *Compensatory Price Payments*

T. W. Schultz and his associates have proposed a system of compensatory price payments as a means of supporting farm incomes in depression.[7] The outlines of this system, in brief, are:

1. During business depressions the government would make commodity price payments directly to farmers.

2. The rate of payment per unit of each commodity would be equal to the difference between the current market price of that commodity and some specified percentage of its predepression price.

3. A depression would be defined in terms of an index of unemployment.

Schultz suggests that an appropriate rate of payment may be the difference between the current market price and 85 percent of the predepression price (page 228). He does not define the predepression price in terms of the number of years to be included. This deficiency, however, is supplied by W. H. Nicholls, who suggests a three-year average price just prior to the depression.[8]

Schultz suggests that "the level of unemployment might . . . be used as an automatic indicator of the need for such payments. For example, whenever unemployment exceeded 5 percent of the total labor force, a depression would be deemed to exist" (page 223).[9] He recognizes that "unemployment records now available are, unfortunately, far from satisfactory for ascertaining the presence of a depression," and he suggests the possibility of using alternative indicators (page 223).

It seems reasonably clear, however, that if Schultz' proposal had been in effect during the interwar period, payments would have been called for in 1921 and 1922, and again from 1930 to 1941 inclusive. He did not estimate the aggregate amount of payments that would have been required during those years, nor is it possible to supply the data for all years without extensive computations, since compensatory payments on any commodity would be discontinued "when the market price of the farm product equals or

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[7] T. W. Schultz, "Two Conditions Necessary for Economic Progress in Agriculture," *Canadian Journal of Economics and Political Science*, Vol. X, No. 3, 1944; and *Agriculture in an Unstable Economy*, pp. 221–235. 1945.

[8] W. H. Nicholls, The First Award Paper in the agricultural price policy contest, this JOURNAL, Vol. XXVII, No. 4, pp. 743–760. November, 1945.

[9] The page references in this section, unless otherwise noted, refer to *Agriculture in an Unstable Economy*.

exceeds the established percentage of the predepression price," (page 229) regardless of the amount of unemployment. Rough estimates, however, can readily be made for certain years. For example, from 1931 to 1933 inclusive, prices of virtually all farm products were below 85 percent of their predepression averages. Hence, the amount of payments due in those years would have been approximately equal to the difference between the cash receipts from farm marketings and 85 percent of the predepression average cash receipts from farm marketings.

The payments that would have been called for during 1931–1933, using the three years, 1927–1929, as the predepresssion period, are indicated in the following tabulation:[10]

Year	Million dollars
1931	3,014
1932	4,642
1933	4,071

Payments to agriculture, as specified above, would not only have prevented any decline in farm income relative to nonfarm income, but would have resulted in a large increase. This is shown in the following comparison:

Year	Parity-income ratio	
	Without payments	*With payments*
Average 1927–1929	94	94
1931	68	127
1932	61	182
1933	78	187

Such a marked boost in the relative status of farm incomes does not seem justified from the standpoint of equity. But a more important consideration is the comparative efficiency of such large payments to agricultue in promoting general economic recovery. There is little evidence to support the hypothesis that government payments to agriculture, in excess of the amount needed to main-

[10] These payments are very much larger than those required under the parity income approach. (See section VI.) Also they are much larger than would have been the case if the level of price supports had been adjusted for changes in the prices of cost items as proposed by this Association's Committee on Parity Concepts in 1945, this JOURNAL, February, 1946, page 396; and by D. Gale Johnson in his Award Paper, this JOURNAL, November, 1945, page 767.

tain the predepression farm-nonfarm income ratio, would be as effective in combating depression as their use in other ways. It may even be that the anti-cyclical effects of government expenditures during a depression would be more pronounced if a part of the payments necessary to achieve farm income parity were allocated elsewhere.

Under Schultz' proposal, the price relationships among individual agricultural products that prevailed in the predepression base period are perpetuated in the returns (prices plus payments) to growers throughout the ensuing depression, except when the price of any individual commodity rises above the support level. If the depression, as defined by an index of unemployment, is a long one, as was the case in the 1930's, the freezing of returns to growers in accordance with the predepression price relationships could create serious maladjustments in the use of agricultural resources. This is recognized by Schultz (page 232), but he does not suggest a remedy.[11]

The scheme mentioned in Section II, of determining the price relationships among commodities on the basis of a five-to-six year moving average, would, in the event of a long depression, be superior to determining them on the basis of predepression prices alone.

Immediate predepression prices are likely to be as unreliable a guide for compensatory payments during an early postwar period as during the latter part of a long depression. Relationships among individual commodity prices tend to become distorted during and immediately following great wars. The price relationships among individual agricultural commodities that prevailed in 1918–19 and 1919–20 could hardly have served as an appropriate basis for compensatory payments in 1920–21 and 1921–22, nor is it likely that the price relationships of 1944–45 to 1946–47 would be a suitable guide for such payments at any time in the future. During the depression of 1921–22 a more appropriate basis for compensatory payments would have been the 1910–14 prices received by farmers, adjusted for changes in an index of the prices paid by farmers. And, if a post-World War II depression should provide occasion for

[11] D. Gale Johnson also recognized that the predepression price relationships could soon be outmoded in a long depression, and states that "provision should be made for adaptation," but he does not elaborate on how the adaptation should be made. The Second Award Paper, this JOURNAL, Vol. XXVII, No. 4, p. 767, November, 1945.

compensatory payments in the near future, a more suitable guide would be the price relationships prevailing during the immediate prewar period.

The advantages cited by Schultz for compensatory price payments may also be claimed for the parity-income approach outlined in the following section. Both would be counter-cyclical in their effects, and both would leave prices free to clear markets. And, if the depression is short and does not closely follow a war, neither scheme would seriously disturb agricultural production. But if the depression is long or comes soon after a war, the parity-income approach seems preferable to the system of compensatory payments, since it would not produce maladjustments in agricultural production.

VI. *An Over-All Parity-Income Approach*

Two members of this committee—R. K. Froker and L. J. Norton—had, prior to their appointment to it, developed independently an over-all parity-income approach.[12] While their proposals differed in detail, they had the same fundamental objective, namely to assure a minimum share of the national income to the farm population while leaving the prices of specific agricultural products to be determined by the free play of market forces. This objective was to be accomplished by supplementing farm incomes directly whenever the ratio between farm and nonfarm income dropped below a prescribed level. Thus the level of farm incomes would be kept in line with total national income. Payments to individual farmers were to be based upon the market value of the products they produce and sell.

Froker suggested the use of the present official parity-income formula,[13] as a standard for determining the proportion of the national income that should go to agriculture, but pointed out that the periods 1925–1929 and 1935–1938 would give substantially the same results as the period 1910–1914. Norton and Working, on the other hand, proposed as a standard the ratio of per-capita cash receipts from farm marketing less purchases of feed and livestock

[12] This JOURNAL, Vol. XXVII, No. 4, pp. 844–851, November, 1945. *Illinois Farm Economics*, No. 127, 128, 131, and 132, December, 1945 and April, 1946. E. J. Working collaborated with L. J. Norton.

[13] "Parity, as applied to income, shall be that per-capita income of individuals on farms from farming operations that bears to the per-capita net income of individuals not on farms the same relation as prevailed during the period August, 1909 to July 1914." Agricultural Adjustment Act of 1938, as amended.

to the per-capita national income. Since this ratio was close to .44 during each of the three periods 1910–1914, 1925–1929, and 1934–1938, they used it in their calculations.

It is the opinion of the majority of this Committee that an overall parity-income approach during periods of depression has much to recommend it. We believe that it can be designed to help alleviate the financial distress which a business depression brings to farmers, and also, contribute to general national recovery. For such purposes, however, a redefinition of parity income is needed.

The present official definition is deficient in three important respects: (1) it employs a fixed base period; (2) that base period is far removed from the present; and (3) the income received by individuals on farms from nonagricultural sources is improperly credited to the nonfarm population.

Instead of a fixed base period, we would employ a shifting one; instead of a base period of more than thirty years ago, we would use the most recent normal peacetime period characterized by high-level production and employment in industry and trade; and instead of crediting the income received by farm people from nonagricultural sources to the nonfarm population we would allocate it to the farm population.

Following the language of the present definition, our revision would read as follows:

> Parity, as applied to income, shall be that per-capita net income of individuals on farms that bears to the per-capita net income of individuals not on farms the same relation as prevailed during the most recent normal peacetime period characterized by high-level production and employment in industry and trade.

In accordance with this definition, each new normal peacetime period of high-level industrial production and employment would in turn become the base period for computing parity income. And the level of income supports to agriculture in depression would be based upon the farm-nonfarm income relationship that prevailed in the most recent normal predepression period. This relationship would change from predepression period to predepression period with changes in basic long-run factors influencing it.

In using parity income as a guide in computing the aggregate amount of supplemental income payments due agriculture in depression periods, we propose that the payments not equal the full difference between the computed parity income and the actual in-

come, but rather a somewhat smaller amount, for example, the difference between 90 (or 85) percent of parity income and actual income. This decision rests mainly on the conviction that complete relative stability of the farm-nonfarm income ratio is too ambitious a goal.

The annual income payments due agriculture from 1921 to 1945, based upon 90 percent of parity income, are shown in table 1. The predepression period applicable to 1921–1922 is clearly 1910–1914; and the predepression period applicable to 1931–1932 is clearly 1925–1929.

TABLE 1. AMOUNT OF PAYMENTS THAT WOULD HAVE BEEN DUE AGRICULTURE FROM 1920 TO 1945 IF PROPOSED PARITY-INCOME SYSTEM HAD BEEN IN EFFECT[1]
(Based upon 90 per cent of parity income)

Year	Average 1910–1914=100		Average 1925–1929=100	
	Parity-income ratio	Payments	Parity-income ratio	Payments
		million dollars		*million dollars*
1920	109	0		
1921	60	1,893		
1922	77	798		
1923	80	690		
1924	82	508		
1925	100	0		
1926	91	0		
1927	92	0		
1928	97	0		
1929	93	0		
1930			86	260
1931			72	854
1932			64	923
1933			82	260
1934			78	528
1935			102	0
1936			100	0
1937			108	0
1938			93	0
1939			87	164
1940			85	302
1941			107	0
1942			134	0
1943			154	0
1944			152	0
1945			166	0

[1] Except that the income received by persons on farms from nonagricultural sources is credited to the nonfarm population. Official data on which to make a proper allocation are not yet available for the entire period.

According to our formula, agricultural payments would have been made from 1921 to 1924 although at a much smaller rate in 1923 and 1924 than in the two previous years. Payments would have been resumed in 1930 and would have continued through 1934, with the peak in 1932. These latter payments would, however, have been based upon the 1925–1929 farm-nonfarm income ratio rather than on that of 1910–1914. Except for small payments in 1939 and 1940, no payments would have been made from 1935 to date.

If another depression should occur before sufficient time has elapsed to establish a peacetime period of high-level production and employment in industry and trade following the current transition period, supplemental income payments would again be based upon the 1925–1929 farm-nonfarm income ratio. But if a depression should be delayed sufficiently long to provide a postwar period of national prosperity which could reasonably be characterized as normal, it would be used in lieu of 1925–1929.

We agree with Schultz that an appropriate criteria for distinguishing between prosperity and depression is the level of unemployment. We would not, however, set that level as low as 5 percent of the total labor force, the figure he suggests. The Twentieth Century Fund survey, *America's Needs and Resources*, correctly, we think, points out: " . . . it seems probable in the light of past experience that an average of 5 percent of the labor force unemployed is not far from a practical minimum for 'high-level'employment, if not for 'full' employment (such as we have experienced during the immediate postwar boom)." (pages 15–16) Hence, our concept of a "period of national prosperity" would include years in which unemployment was higher than 5 percent, perhaps as high as 10 percent.

The next major consideration, after establishing a method for determining the amount of total payments, is the formulation of a plan for distributing them to individual farmers.

Both Froker and Norton have proposed that such payments be based on individual cash receipts from marketings.* This would mean that if the amount to be distributed in any year equaled 10 percent of the total cash receipts from marketings, each farmer would receive a payment equal to 10 percent of his individual sales after certain deductions.

In order to avoid the double counting of income included in

* See Mr. Eggert's comments.

interfarm sales, the Committee suggests that cash payments for feed, livestock, and seed be deducted from gross cash sales. It is recognized that different farmers render varying amounts of marketing services which may affect the relative prices they receive. In each case sales should be calculated on the equivalent wholesale value in the market commonly used by the farmers of the commodity. To simplify administration a minimum payment of, say, $20, might be made.

To avoid payments at the full scale to very large producers, a sliding scale might be developed. For example, payment might be at the full rate on the first $5000 of sales and at a progressively lower rate on each succeeding increase of $5,000 of sales. Such a graduated scale of payments departs from one of the principles underlying this proposal, namely, to pay in accordance with production in order to encourage maximum individual effort. Nevertheless, there are valid objections against large government payments to very large producers such as those operating corporation and nonfamily type farms.

Another conditional factor, in addition to scaling down payments to very large producers, could well be the confinement of payments to farmers who maintain certain standards of land use and conservation on their own farms. Admittedly, encouraging conservation and maintaining parity income are two separate aspects of public policy, but there are advantages in linking them together. Instead of receiving payments for specific conservation practices in good times as well as in bad, farmers who adopt genuine conservation plans would be eligible for payments in depressions when the added income is needed.

The outstanding advantage of making payments to farmers on the basis of cash farm receipts is that additional distortions among prices of individual commodities would not be created. Prices would be set in the market and no specific payments would attach to any commodity.

The chief limitation of the method is that it would afford least income protection to producers whose products have fallen more in price than others. However, it must be recognized that these relatively low prices, which develop in prosperous times as well as in depressions, may merely indicate the need for production adjustments. In such cases the method of payment recommended would stimulate needed adjustments rather than retard them.

Objections sometimes voiced against an over-all parity-income

approach largely disappear when it is viewed solely as a device to alleviate the financial distress which a severe business depression inflicts on farmers, to reward farmers for maintaining full production in such periods, and to help speed general business recovery.

The contention that any supplemental income payments should go mainly to the lower-income group rather than to commercial farmers does not seem tenable to this Committee. Virtually all of the decline in per-capita net farm income relative to per-capita net nonfarm income during periods of severe business depressions is occasioned by the drop in the net income of commercial farmers. The incomes of non-commercial farmers are little affected by a collapse in market prices. The nature of their problem differs markedly from that of commerical farms, and its solution requires a different approach.

The kind and amount of payments proposed here would not, we believe, impede the needed transfer of labor resources out of agriculture. We recognize that overpopulation in some agricultural areas is partly responsible for the low average of per-capita farm income. The movement of people out of some agricultural areas needs to be speeded up, not retarded. However, the size and distribution of supplemental income payments which we propose would not have a retarding effect on migration from farm to city. Historically, people have left the farms in good times when employment opportunities in industry and trade were relatively abundant. In such times no payments to farmers would be made.

We do not claim that parity income as redefined by this Committee would in fact give the average farmer a real income identical with that received by urban residents. Real income is compounded of too many intangibles to permit accurate measurement. But even if it should be found that the real incomes of rural people averaged below those of urban people during normal peacetime periods of national prosperity, we would reject the proposition that income payments to commercial farmers in such times are an appropriate method of correcting the situation.

VII. *Widening Economic Opportunities*

Measures to ease the burden on agriculture of severe business depressions and to aid recovery, while important, should not lead to the neglect of programs designed to raise the general level of farm real incomes, particularly of the lower-income groups. But price maintenance or parity-income programs of the type discussed

earlier are not suitable means for accomplishing this purpose. Rather, the basic solution should be sought in measures designed to widen the economic opportunities and horizon of rural people both within agriculture and outside it.

While the Committee realizes that discussion of general measures beyond the parity-price and parity-income approach is not included within its assignment, it feels compelled to call attention to the fact that something more than these must be included in any effective broad-scale agricultural program.

The parity-income and compensatory price payment programs discussed above may be viewed as temporary devices to aid agriculture during severe business depressions. In that respect they are similar to anti-depression measures which have on occasion been adopted in the nonagricultural field. In contrast with such emergency measures, there are others which should be oriented toward raising the level of economic opportunities. Such long-term programs should not, of course, be limited to agriculture. We shall confine our remarks here, however, to certain aspects which seem to warrant emphasis within the agricultural field.

The disparity between the educational facilities and opportunities available in rural and urban areas is a paramount factor in promoting economic inequality between the two groups. The rural youth cannot compete on an equal basis with his city-bred contemporary when seeking employment away from the farm because he has been denied the educational opportunities extended to the latter. If a comparable educational program, including vocational training and guidance, were extended to the farm population, many barriers to the flow of human resources would be removed. Granted that our present elementary and secondary educational program is in need of much improvement, the most imperative need is in the rural areas of our nation.

The fact that rural life in general is conducive to health has led many to the unfounded supposition that there are no deficiencies in rural health conditions. This is an erroneous notion. The fact is that farm people have benefited less from medical and nutritional advances than urban people. A second long-term objective is clearly indicated: to improve the health and nutrition of farm people. This will be in part, of course, also an educational problem.

The ratio of people to resources, in rural and urban areas, might in some cases be more nearly equalized by the transfer of capital from areas where it is relatively abundant to areas where it is less

abundant. Government might well facilitate such a process by encouraging, in some appropriate manner, shifts toward a more decentralized industrial system.

Supplementing these long-term programs are others which should be directed toward strengthening the farm as an economic unit and the farmer as an entrepreneur. It is clear that many farms are too small in the sense that they do not provide an adequate level of living even under the best of price conditions. Farm tenure is another long-term problem which requires attention. Improved credit facilities and the use of modern farm management practices might well aid many farmers in obtaining more adequate economic units, and in improving tenure conditions.

The essence of these several long-term programs is that by widening the economic opportunities for farm people we can get more directly at some of the basic difficulties underlying our farm problem. Providing greater economic opportunities and making it possible for farm people to take advantage of them have the merit of being self-liquidating. By such measures we might approach the day when farm people will not require substantial and recurring financial aid from their government. In contrast, the present parity-price system blocks necessary adjustments and permanently keeps large parts of our agriculture dependent upon government subsidies.

A DISSENTING COMMENT*

O. V. WELLS

The Special Committee to consider the revision or redefinition of parity prices and parity income has concluded that the parity price standard and such support activities as might be associated therewith should be abolished and that direct government payments should be substituted therefor. Such payments would be used as an anti-depression aid and would be distributed among farmers generally on the basis of actual net sales for the current year in an amount sufficient to bring overall farm income to 80 or 90 per cent of a parity level calculated on the basis of relative farm and non-farm incomes existing during the last period of full employment.

These conclusions have been set forth in an excellent statement on which all members of the Committee except myself are in full agreement. Although agreeing with much that the Committee has said, I still find myself extremely skeptical with respect to their leading recommendation and the

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 8, 1947.

central argument on which it is based—i.e., that farmers should endeavor to operate under the simplest possible "free" market scheme in a complex, intricately-organized economic world where wage rates, business prices, and the foreign market are at least "semi-administered."

I recognize that the Committee's conclusions are in accord with those of a great many other economists, as witness the preliminary finding some time ago of a similar Special Committee of the American Economic Association, as well as the leading papers in the recent prize contest sponsored by this Association.

I recognize that there may be conditions under which the use of commodity payments might well be preferable to direct price support. That is, there may be special cases where the use of payments is preferable to allowing commodities to spoil or cases where the use of payments will clearly result in an immediate and substantial increase in marketings or amounts used. I also recognize that payments should tend to minimize government interference in the marketing and processing field.

However, it seems to me that these are all special cases or advantages, "other things being equal." The disadvantages of the payment proposal and equally important, the chances that such an alternative would offer a *stable* and an *acceptable* solution to the difficulties with which commercial farmers may soon be faced, must also be considered.

In many cases, I doubt if the payment proposal would automatically lead to the "clearing" of the market. At the same time, the use of the scheme as suggested would certainly not encourage the carrying of surplus production from high yield into *deficit* years—*deficit* either in terms of low yield or sharply increased demand. I further doubt whether either "free" prices or free price associated with the proposed non-commodity payments would *allocate* resources as between farmers and between commodities in as wise a manner as is sometimes claimed. I see no need for developing these items in detail. All I want to do is to simply emphasize the question as to whether the economic advantages of the payment proposal are not limited indeed.

There is an equally strong question in my mind as to how well farmers themselves might accept the payment solution. We already know of course that farmers and their representatives are generally opposed to direct aid via Government check. It seems to me that these feelings are something more than mere bias, that as a matter of fact there are sound grounds for this opposition, both cultural and operational. Specifically, the solution of all our difficulties through direct government spending is by no means a generally agreed upon remedy, even among agricultural economists; the proposed payment program is frankly designed for only intermittent use as an offset to relatively severe declines, which might well mean that it would have to be planned, debated, and legislated anew each time it was used; and finally, Americans generally simply do not like to feel themselves dependent upon direct subsidies or Government checks except as a last resort.

Altogether, it seems to me that the Committee's assignment needs to be considered in relation to the actual setting in which it appears farmers

must operate as we move ahead. It is no accident that we are living in a semi-administered world and here I agree with Dr. T. W. Schultz: Solutions are so much easier both in terms of theory and operation, given either a completely free or a completely administered market. However, it seems to me that actual conditions lie somewhere in between and that the best solution to the agricultural price problem can perhaps be found by endeavoring to build upon the experience which we have gained, often at considerable expense, since the enactment of the Agricultural Marketing Act of 1929 and the Agricultural Adjustment Act of 1933.

This would call for a revision of the current parity price standard, accepting the current average level or something close thereto as a satisfactory overall goal or working standard, revising the commodity relationships within the parity calculation in accord with relative prices prevailing during the decade immediately preceding the year for which the calculations are being made, agreeing upon a moderate support level, and finally, accepting the fact that considerable flexibility must be allowed, preferably at the administrative level. I recognize the difficulties to which such an approach might lead but I do not believe they are any greater than those associated with the Committee's proposal.

A MODIFYING COMMENT*

R. J. EGGERT

I agree with the Committee's report except with regard to the proposed method of distributing payments to individual farmers.

Distributing payments on the basis of individual cash receipts for marketings, as proposed in the report, would tend to favor those farmers who were in the fortunate position of still having a relatively high price for their product with average or above average yields. This would lead to the damaging charge (politically) that farmers who least needed payments were receiving the highest amounts of payment. It would also lead to the charge that certain commodity groups of our agricultural economy that had shown the least price decline would be collecting the most money, and conversely, those showing the most decline would be collecting the least money. To avoid this weakness, consideration should be given to setting up a plan to distribute payments to farmers on the basis of their contribution in physical production units. These physical units of production would be based upon an approximation of the average amount of land, labor, and capital utilized by each commodity produced. Weighting in the formula should give adequate consideration to the commodities' contribution to proper nutrition as well as to soil conservation and improvement. Under such a proposal, those whose efficiency was below average would be slightly penalized, while those farmers who were able to produce a given amount of product with less land, labor, and capital, would be given a slight advantage. A sliding scale could be set up making certain payment

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 8, 1947.

to those having production units between 0 and 10, another payment to those producing units between 11 and 20, etc. It will be recalled that a system such as this was used for draft deferment, but of course, this rough method of measuring labor inputs should be expanded upon to include inputs of land and capital.

This plan would also avoid the inventory problem associated with the distributing of payments on the basis of cash receipts, which might tend to encourage farmers to sell by a specified date so that they would get the payments that were assured them that year. From the standpoint of compliance, this plan would have the merit of requiring only adequate poundage sales, and an inventory statement, avoiding the element of fallacious price that might be associated with distributing payments on the basis of cash receipts. Payments would thus be made on the basis of each individual farmer's physical contribution to the national output, leaving prices to take care of the problem of adjusting production.

I can see no economic justification for penalizing large producers in a depression period just because of their size. There are probably certain areas in our agricultural economy where size is necessary for the most efficient output, and the trend is definitely in the direction of larger sized farm units. Furthermore, it is generally recognized that large scale agricultural enterprises often have a very difficult time riding through a serious depression.

It is my strong conviction that these payments should not only be made contingent upon "wise land use and conservation" but also upon standards of efficiency in production, including livestock production. In this way our entire economy would benefit even more from funds so expended, and consumers, as well as producers, would share in the benefits of more efficient production. This proposal would also have the practical advantage of helping to insure continued public and Congressional support for funds to cover the cost of the program.

As a basis of procedure, and in order to prevent the program from becoming too centralized, consideration should be given to county committees to determine the desirable practices in their respective counties. Agricultural colleges and experiment stations already have developed desirable practices for both production of crops and livestock, and the basing of the above payments contingent with the following of selected practices would provide additional incentive for the individual producers to adopt these practices.

DEVELOPMENTS UNDER THE RESEARCH AND MARKETING ACT OF 1946—FINANCE, ADMINISTRATIVE ORGANIZATION, PROCEDURE AND POLICY*

E. A. MEYER
Administrator, Research and Marketing Act

THE Research and Marketing Act of 1946 which was signed by the President August 14, 1946, authorized an appropriation for the current fiscal year of 19 million dollars. The amount actually appropriated by Congress for this year is 9 million dollars and this is divided as follows:

Title I, Section 9—Agricultural Experiment Stations—$2,500,000. This amount is allocated to the several states in accordance with a formula provided in the act, with the exception of $625,000 which is earmarked for regional research by groups of stations. An additional sum of $75,000 is earmarked for administrative use, including expenses incurred by the committee of nine experiment station directors who must review and approve proposals for regional projects. The funds allocated to the individual states by this act must be matched by State funds. At least 20 percent of the grants to the experiment stations must be used for marketing research. Indications are that about 40 percent of the funds appropriated this year are to be used for marketing research.

Title I, Section 10 (a)—$3,000,000. Utilization Research—New and Wider Uses of Agricultural Commodities and Their By-Products.

Among the bureaus that are to share in these funds are the Bureau of Plant Industry, Soils and Agricultural Engineering; Bureau of Animal Industry; Bureau of Dairy Industry; Bureau of Entomology and Plant Quarantine; and the Bureau of Agricultural Economics and Industrial Chemistry.

The secretary may contract with private or public organizations or with individuals if the desired work can be done more efficiently or at less cost in this way.

Title I, Section 10 (b)—For Cooperation with State Experiment Stations in Regional Research Other Than Utilization Research—

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

$1,500,000. Eight main lines of work are being undertaken under this section as described later.

Title II—Developing Sound and Efficient Systems for Distributing and Marketing Agricultural Products—$2,000,000. This will include processing, packaging, handling, storing, transportation, grading, costs, margins, etc. These funds will be used mainly by the Production and Marketing Administration and the Bureau of Agricultural Economics.

Administrative Organization

The Secretary of Agriculture has appointed an advisory group within the Department consisting of the administrator of the act and heads of agencies that will do the Departmental work. This group recommends policy and program action under the act.

The administrator is organizing a small staff for general direction of the work to be done under the act and for coordination between the various agencies involved.

Work groups consisting of representatives of USDA and state agencies, concerned with programs in a particular commodity or functional area, have been appointed. The main function of these working groups is to prepare drafts of programs for presentation to the advisory committees mentioned later. The chairman of each working group also serves as executive secretary to the corresponding commodity or functional advisory committee. Each commodity or functional advisory committee is made up of representatives of producers, processors, and distributors. There are 19 commodity committees and two functional committees (on transportation and cold storage). The report of each of these advisory committees goes direct to the National Advisory Committee (Committee of Eleven) without change, although the administration is free to comment upon or to criticize the recommendations of these advisory committees.

The administrator's staff organized to date includes the following personnel: Henry G. Herrell, Executive Secretary to the National Advisory Committee and Executive Assistant to the Administrator; also heads of four commodity groups as follows: J. Roy Allgyer (grain, feed and seed crops, and forest products); Maurice R. Cooper (cotton, sugar, tobacco, fats and oils); Harry C. Trelogan (livestock and animal products); C. O. Bratley (fruits and vegetables).

Use of Committees

A National Advisory Committee has been established as required in the Act, nineteen commodity advisory committees representing producers, industry, and science have been set up. Each of these committees has met at least once and has submitted recommendations to the National Advisory Committee.

The working groups made up of department personnel have prepared reports to help in planning programs for citrus fruit, cotton, dairying, deciduous fruit, dry beans and peas, feed, grain, livestock, peanuts, potatoes, poultry, rice, seeds, soybeans and flax seed, sugar, tobacco, tree nuts, vegetables and wool.

The Committee of Nine, made up of directors of state experiment stations, has recommended a program of regional research.

How Lines of Work Are Determined

Procedures have been worked out as a result of many conferences since passage of the act, first looking at broad needs and later at practical arrangements that are possible under the recent appropriation. Generally speaking, aside from the original exploratory work and setting of broad policy, this is what happens. Working groups in the Department of Agriculture prepare background statements on problems and needs. The commodity advisory committees use these statements as the basis of discussion and develop a specific program recommendation including relative priorities. The recommendations of these advisory committees go to the National Advisory Committee as well as to interested agencies and officials in the Department of Agriculture and to state agencies and are also made available to the public. Other working groups review programs for commodities that are not covered by specific advisory committees. The Department, together with state agencies, develops proposals for specific projects. Other specific proposals come from the Committee of Nine (with reference to regional research) and from state and private agencies.

The Administrator's office, with the help of the Department of Agriculture advisory group, selects projects and drafts an over-all program. The National Advisory Committee reviews this proposed program and makes recommendations to the Secretary of Agriculture regarding programs and policies.

After any necessary revision in projects, the administrator allocates funds for the initiation of work by the several agencies.

Principles Followed in Selecting Projects

Projects to be developed under the Research and Marketing Act of 1946 should represent new lines of activity within various fields or activities in which expansion is clearly indicated. A proper balance should be maintained between fundamental research on the one hand and service work or the application of research to specific problems on the other hand. Efforts should be concentrated so as to do an effective job in a limited number of fields rather than scattering funds and efforts in a wide variety of superficial undertakings.

The Act itself sets forth these purposes: To provide for further research into basic laws and principles relating to agriculture and to improve and facilitate the marketing and distribution of agricultural products. The principal emphasis is on marketing research, marketing services, and the utilization of farm products.

The Research and Marketing Act is a foundation stone for a postwar agricultural program. Emphasis is placed on the coordination of research and service work to solve outstanding agricultural needs—especially new and expanded uses for farm products, as well as more efficient and more effective marketing of those products. It is clearly the intent of Congress to bring about more team work between states, between federal and state agencies, between government and industry, trade, and producers. The National Advisory Committee has emphasized the potentialities of this Act for achieving profitable utilization and wide distribution of high-level agricultural production.

Some of the Actual Lines of Work

With the $3,000,000 allocated for "new use" programs, we have set up four main lines of activity. (1) New uses for commodities likely to be in large supply. (2) Improving nutrition and expanding marketing. (3) Relieving pressure on commodities in large supply by developing profitable alternatives, and (4) Development of new crops and uses and domestic supplies of agricultural products.

With the $1,500,000 set aside for cooperative research on problems other than utilization, we have set up several main lines of activity, namely: (1) farm mechanization and more efficient and satisfactory use of farm buildings and homes; (2) reducing hazards and

risks in agricultural production; (3) improving nutritive value of crops; (4) improving the marketing of agricultural commodities; (5) improving rural health; and (6) improving farm statistics.

With the $2,000,000 for developing a sound and efficient system for distributing and marketing agricultural products, we plan to study preparation of farm products for domestic and foreign markets. This includes processing, packaging, handling, storing and transporting. Also planned are studies on standards, grades, costs and margins, prices, and market statistics and the development of new and expanded market outlets. These studies are pointed toward quality improvement and cost reduction in getting goods from producers to consumers.

What Members of the American Farm Economic Association Can Do To Help

When invited to speak I asked suggestions as to what points to cover and one suggestion was, "What can the American Farm Economic Association do to help in the program?" For your consideration, I will mention two or three problems. In attempting to apply scientific methods to the study of marketing and distribution problems, we must explore new territory, blaze new trails. Perhaps this is one of the meeting grounds of biological, physical and social sciences. We need the best thinking of the scientists, technologists, and competent observers. As shown in the chart of committees, we welcome and are prepared to systematize advice and counsel of many groups. In addition, we could profit from independant studies and measurements.

Qualified personnel is scarce, especially in marketing, because our programs go so much further than previous activities. Economists at the colleges can study the Research and Marketing Act and the program that is being developed under it, and attempt to educate and train students in ways that will enable them to contribute to this effort. The Act contemplates expansion of the program so that by 1951 the country will devote $61,000,000 a year to this work as compared with $9,000,000 this year.

Your assistance will be welcomed in ways you deem best.

FEDERAL PROJECTS SUBMITTED UNDER THE RESEARCH AND MARKETING ACT OF 1946*

HARRY C. TRELOGAN[1]
Office of the Administrator, Research and Marketing Act

IT IS difficult to give, at this stage, a quantitative analysis of marketing projects submitted under the Research and Marketing Act of 1946. One of the first difficulties has to do with the definition of marketing. For example, is a project on the breeding of barley to develop a type better suited for malting purposes a marketing project? There is a tendency on the part of those submitting projects to adopt a very broad definition of marketing.

Another problem is to distinguish between marketing research and marketing services such as grading and market news.

The majority of projects submitted under the new act can be classified on a commodity basis, but some cut across commodity lines and must be classified on a functional basis. Following is a tentative classification of the 140 federal projects that have reached the Administrator's office:

Title I, Section 10 (a) *Utilization research*

37 projects on marketing, involving research in natural sciences
2 projects on marketing primarily of an economic nature
3 projects on production
3 projects on nutrition

45 projects total

Title I, Section 10 (b) *Research other than utilization, in cooperation with State Experiment Stations.*

$225,000 has been earmarked for regional studies of marketing. The following projects have been submitted in other fields:

28 projects on production, involving research in natural sciences
5 projects on production, primarily of an economic nature
5 projects on rural housing, farm power, and welfare

38 projects total

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

[1] Dr. Trelogan spoke extemporaneously. These notes from his talk were prepared by Leland Spencer.

Title II *Marketing.*

$225,000 for extension projects; $250,000–$300,000 for cooperation with State Departments of Agriculture.

1 project on foreign trade
9 projects on marketing, involving research in natural sciences
47 projects on marketing, primarily of an economic nature

57 projects in all

Of the 45 projects submitted under Section 10 (a), 35 pertain to particular commodities and 10 cut across commodity lines.

Of the 38 projects submitted under Section 10 (b), 9 pertain to particular commodities and 29 are not specific as to commodities.

Of the 57 projects submitted under Title II, 43 pertain to particular commodities and 14 are not specific as to commodities.

There appears to be nothing definitely new or novel about the projects so far submitted under the new act. There is, however, a difference in emphasis, attributable to the terms of the act. The influence of committee recommendations also can be observed. In general, the research contemplated under this act appears to be in the nature of an attack upon many segregated problems, with particular emphasis on commodities of which there is, or is likely to be, a surplus. There is much stress on marketing, but difference of opinion as to the meaning of this term is clearly evident.

Much attention is being given to service activities and to contracting for work to be done, in order to get quick results. There is a noticeable lack of attention to lines of work that might stimulate increased regulatory activity.

The projects reflect the fact that there is no clearly defined underlying philosophy as to what should be done other than what is in the Act itself. It is evident that the act means different things to different people, and the consequent interpretations of what projects are intended to accomplish.

MARKETING RESEARCH CONTEMPLATED BY THE STATE EXPERIMENT STATIONS UNDER THE RESEARCH AND MARKETING ACT OF 1946*

W. B. Stout
Office of Experiment Stations

FOLLOWING the approval of the Research and Marketing Act on August 14, 1946, the State agricultural experiment stations, through the four regional associations of directors, began to plan for cooperative attack on major problems in the fields of work that had received special consideration in the development of Title 1 and in the hearings on the bill. Research technicians of the experiment stations met with representatives of the United States Department of Agriculture and of industry and the trade to formulate programs for cooperative research under the provisions of Sections 9 and 10b. A considerable part of this planning was directed to the organization of a program of cooperative regional projects, as specifically authorized by Section 9b3, in fields that had been given first priorities by the regional associations and the Committee of Nine. As a partial result of the planning, twenty-five regional marketing projects were developed that will be participated in by the States in the four regions. These projects pertain to the marketing of live-stock and livestock products, milk and dairy products, poultry and poultry products, fruits, vegetables, potatoes, and cotton.

At the time plans were made for the development of the regional projects, consideration was also given to other fields for the use of later increments of the Regional research funds or for immediate attack under the direct grants to the States provided for under Sections 9b1 and 9b2. A considerable portion of the direct grants was also earmarked for the support of projects to be set up under Section 9b3, which provides for cooperative regional research.

Although not all State plans have been entirely completed, information available at this time shows an estimated use of $960,931 of Section 9 funds for marketing research or about 38 percent of the $2,500,000 appropriated under Section 9. Based on funds actually available to the stations for expenditure, which excludes the items of $75,000 for administration, $5,000 for the Committee of Nine

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

expenses, and $10,460 for Alaska, the percentage is just slightly under 40 percent. This greatly exceeds the 20 percent prescribed in the law to be used for marketing research, and is an indication of the importance attached to this field of work by the States.

A further analysis of the funds to be expended on marketing research by the States, indicated also the importance placed on the cooperative regional approach to marketing research as prescribed in the legislation. Not only have $256,200 of 9b3 funds been designated for use in regional marketing research, but approximately 80 percent, or $550,683, of the direct grants used for marketing research are for work on the seven commodities supported by the regional fund. This is not to say that all of the $550,638 of 9b1 and 2 funds above mentioned have been allotted to regional projects, for some nonregional projects have been submitted by the States that will contribute to and supplement the regional projects. Actually it is contemplated that about two and one-half dollars will be expended in regional marketing research to each dollar expended on nonregional marketing projects.

Now let us devote the next few minutes to the number and kind of marketing projects that have been submitted by the States under the new legislation. To date, and not all States have submitted their complete programs, 183 new marketing projects have been submitted. One hundred and twenty-six of these projects are integrated and coordinated parts of the regional studies, and 57 are not. On a geographic basis, the Northeastern States have submitted 40 projects of a regional nature and 8 that are nonregional in character. The Southern States have submitted 38 regional and 26 nonregional projects, the North Central States 28 regional and 21 nonregional, and the Western States 20 regional and 2 nonregional projects.

In the main, these projects have been well conceived and carefully developed. In evidence of this point, 163 of the 183 projects submitted have either been approved or recommended for approval, while twenty are being held for clarification or slight revision.

On a commodity basis, there have been submitted 23 regional and two nonregional projects on the marketing of livestock and livestock products; 24 regional and six nonregional projects on the marketing of milk and dairy products; 27 regional and two nonregional projects pertaining to poultry and poultry products; 14 regional and 12 nonregional on fruit marketing; 8 regional and 11

nonregional on vegetables; 19 regional and one nonregional on potatoes; and 11 regional and one nonregional projects have been submitted on cotton marketing.

In addition to the above, 22 nonregional projects have been submitted covering a broad field of marketing problems. Five of these projects have to do with tobacco marketing; three pertain to the marketing of grain, hay and seeds; three are on the marketing of forest products; and one each on rum, nuts, sugar cane, marketing potentials in selected areas, a general price analysis of agricultural products, agricultural marketing policies, effectiveness in disseminating agricultural marketing information, a business analysis of farmer's marketing and purchasing associations, consumer acceptance of certain foods at retail, methods of sampling for study of consumer demand, and the interest of agriculture in world trade. All of these projects have been developed within the broad definition of marketing as set forth under Section 203 of the Research and Marketing Act. It is this definition that has been accepted, for the time being at least, by the Committee of Nine and the Office of Experiment Stations to determine what should and should not be classified as marketing research.

You will be interested, I am sure, in a brief summary of the vast array of marketing problems toward which research will be directed under the projects submitted. Although a number of projects will give consideration to several problems, I shall endeavor to point out those problems that have been given attention most frequently. The problem of quality, its improvement, control and preservation is being given greatest consideration; to be closely followed by the problem of price, pricing policies, formulas, patterns and plans; marketing and merchandising methods and their appraisal; marketing costs, margins and cost relationship, service and servicing; market outlets for agricultural products; consumer demand, preference and acceptance of agricultural products; marketing and handling practices; market value of products and returns to growers; the problems of processing, storage, and transportation; preparation for market, including containers, packaging, grades, grading, and standardizing; factors affecting distribution, consumption, food habits of people, and utilization of food; demand, supply, surplus, production adjustments, governmental programs; market losses and spoilage; volume as related to efficiency in marketing; regional, inter-regional and international competition; marketing

facilities and equipment for the efficient use of labor and equipment in the marketing process.

These are the problems toward which the new marketing research programs will be directed by the States. I am sure you will agree that new information growing out of the proposed studies should be of great importance in helping to solve the problems above mentioned. But some of you may say this is not new research, it is the same kind of research that has been done in the past. On this I would beg to differ. It is new research when viewed in the light of time and place economics. True, many of the problems that confront us are old, but have not been studied by many States because of the lack of funds. Others are new, having grown out of recent situations and developments, and by the same token still others have taken on new meaning and significance.

In conclusion, I should like to state that perhaps one of the most important features in the whole program is the emphasis on the cooperative approach to research. Although many States in the past have had the opportunity of working together on regional problems, the new Act makes possible a much larger opportunity for cooperation. In fact, the way is now open for coordinated research on a greatly enlarged scale in which all who may have something to contribute can play a part. Much evidence bears out the fact that this procedure is already under way. Not only are economists across State lines working together on these marketing problems, but dairymen, poultrymen, livestock specialists, horticulturists, plant pathologists, engineers, and other scientists including chemists, physicists, and nutritionists are taking an active part in the marketing projects both in leadership and advisory capacities. Furthermore, in the case of most of the regional and some of the nonregional projects, the various gencies of the United States Department of Agriculture and representatives of the trade and industry have cooperated wholeheartedly in developing the project outlines, and have pledged themselves to participation and assistance during the conduct of the studies. Without such support, much of the work contemplated would not have been possible.

A good beginning has been made, and we are all looking forward to the time when the results of our studies can be applied to the problems at hand, and when future increments under the legislation will be appropriated to permit both the expansion and intensification of this important work now getting under way.

REGIONAL AND INTERREGIONAL COOPERATION IN DAIRY MARKETING*

GEORGE F. DOW
Maine Agricultural Experiment Station

CONSIDERABLE dairy marketing research work had been undertaken on a *regional* basis for a number of years prior to the enactment of the Research and Marketing Act of 1946. *Interregional* cooperation was begun on an effective basis between the Northeast and North Central States, starting at a joint meeting in Chicago on May 8, 1945 approximately two years prior to the first conference to consider regional projects under the Research and Marketing Act of 1946.

The New England Research Council is an excellent example of regional cooperation which was started more than 20 years ago, and has continued effectively throughout this period in coordinating the dairy marketing and other research work of the New England States. In this organization, the opportunity was provided for an exchange of ideas and crystallization of plans at the annual meetings; through specialized committee assignments, and contacts with the Council Secretary. Because the Secretary also served as a representative of the Bureau of Agricultural Economics, coordination was achieved not only between the 6 New England Experiment Stations, but also with B.A.E.—a most happy cordial relationship of the highest degree of cooperation. Many projects have been undertaken cooperatively by the state workers and by the Secretary of the Council on behalf of the various states.

Another example of regional cooperation in the Northeast is that of the Northeast Dairy Conference, which provides for joint action on dairy problems, with special emphasis to the problems of Cooperatives serving the dairy industry. The work of the dairy marketing research men of the Northeast has been closely coordinated with the work of various committees of this Conference. Committee problems have included those of uneven milk production; dairy price plans, including the problem of parity prices; milk distribution efficiency, including trends under wartime conditions involving every other day delivery of milk on retail routes. In this latter phase of work, for example, a coordinated study was made to

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

include trends from October 1941 to October 1944 for milk dealers in Upstate New York, Boston, and Portland. Later information for other markets supplemented these studies and was instrumental in continuing in the Northeast the wartime practice of every other day delivery.

If time permitted, other examples of regional cooperation could be cited including that in other areas with which many of you are better acquainted than myself.

Interregional cooperation, in contrast to that on a regional basis, was undertaken on an effective basis by Directors Noble Clark and C. E. F. Guterman who called a joint conference at Chicago on May 8 and 9, 1945, including workers from the Northeast and North Central States. This included two groups: one of dairy farm management workers who are progressing in certain fields of cooperative endeavor, and the other consisted of dairy marketing research men. The Marketing Committee exchanged ideas and outlined the more important fields of dairy marketing in which more research work was most urgently needed. A subsequent committee in September 1945, including two workers from the Northeast States, two from the North Central States, and one from the Bureau of Agricultural Economics, further outlined the work needed and submitted this outline to each of the Northeast and North Central Stations for their suggestions; what work had been undertaken or completed by each Station; which problems were considered most important for future work; and new lines of work in which work was expected to be undertaken. The replies from the various stations served as the basis for active work that was undertaken cooperatively on an interregional basis, with specific plans made at a conference in Pittsburgh on May 22 and 23, 1946, including 15 research men from the Northeast and North Central Stations and 2 from the Bureau of Agricultural Economics. The specific work undertaken at this meeting included:

Preparation of a statement released July 12, 1946 on "Ways to Meet the Immediate Problems of Seasonality in Production and Marketing of Milk."

A second phase of the work undertaken by the interregional group was the appointment of a committee including Dr. MacLeod of B.A.E., Dr. Rudy Froker of Wisconsin, and Dr. Leland Spencer of Cornell to draft a report summarizing available information on "The Market Demand for Dairy Products, Including an Evalua-

tion of Alternative Public and Industry Policies for Maintaining and Expanding Market Outlets." This was prepared in preliminary form in January 1947, was redrafted by May 1947, and is now being completed for publication. A total of over 17,000 copies have been ordered for use by the various Experiment Stations in the Northeast and North Central States.

The need was recognized for much additional information concerning the problems of uneven milk production. Consequently three subcommittees were set up to prepare reports summarizing all available material on this subject. Subcommittee 1 was to study the Effect of Seasonal Price and Production Patterns on Producer Returns. Subcommittee 2 was assigned Effect of Seasonal Price Plans on Producers' Milk Deliveries. Subcommittee 3 was responsible for analysis of Procurement of Supplementary Milk Supplies. These committees met and organized their work on an interregional basis, with committee coordination being achieved by Dr. T. M. Adams, General Chairman, and the late Dr. Alan MacLeod who was assigned by B.A.E. on a part-time basis to assist the committees in their work. The program of work has been delayed for several reasons, including the untimely death of Dr. MacLeod. Much progress, however, has been made and it is expected that the reports will be completed this fall, now that Dr. Merton Parsons has been assigned by B.A.E. on a temporary basis to assist in this work.

The above summary which has been developed in rather detailed form indicates that a considerable amount of time and thought has been given to cooperative coordinated research between states, also involving cooperation with the United States Department of Agriculture; and that considerable interregional dairy marketing work was in progress prior to the Research and Marketing Act of 1946. This background information is important in explaining the interregional project recommended under the new legislation of 1946.

Interregional Dairy Marketing Project for 9b3 Funds Under Research and Marketing Act of 1946

A meeting was called at Cincinnati for January 22–23, 1947, which developed an interregional project to include all four areas of the United States. The project recommended by the 25 workers attending, including 3 from the United States Department of Agri-

culture, was based primarily on the most important fields of work indicated in earlier interregional meetings. Four important phases of dairy marketing research were recommended under the general project heading of "Maintaining and Expanding the Market for Dairy Products." This included (1) Consumption and demand studies, (2) Pricing of milk and milk products, (3) Seasonality of milk prices and supply, and (4) Lowering marketing costs. Obviously these four sections include work of interest to all four areas of the United States. They are major problems in marketing dairy products, and new projects to be undertaken by most States could be included in the coordinated program with cooperation within an area and between areas.

This interregional project was approved by the Experiment Station Directors, and by the Committee of Nine under the Research and Marketing Act of 1946. The final announcement of allocations from 9b3 funds was received late in August 1947 and included $33,300 for dairy marketing work, which was 13% of all marketing funds. These allotments represented 24% of all 9b3 marketing funds allotted for the Northeast, 16% for the North Central States, 8% for the Western States, and 4% for the South. The number of states represented includes 10 from the Northeast, 9 from the North Central area, and 4 from the Western area—all of which are included in the general interregional project. In addition, two of the Southern States were allotted 9b3 funds for seasonal milk problems, which also could have been included under the general project. The amount allotted per state was from $800 to $2000.

In addition to 9b3 funds for cooperative dairy marketing work, the United States Department of Agriculture has tentatively allotted a total of $28,000 from 10b funds for similar cooperative work with the States. No further indication has been received as yet as to the phases of cooperative work to which the 10b funds will be allotted, other than a request to the states, extended by Director Meyer through Dr. Trullinger of the Office of Experiment Stations dated August 25, 1947, "to invite representatives of the Federal Agencies to participate in the meetings planning the regional projects." It is of interest to note that the amount of 10b funds allotted to dairy marketing also is 13% of all 10b marketing funds, —or the same ratio as allotted for 9b3 funds. However, the proportion of the allotment to the Southern States was 32% of all U.S.D.A.

dairy marketing 10b funds as compared to only 8% of the 9b3 funds.

Tentative reports received to date from most cooperating states indicate about eight states planning cooperative work on consumption and demand, about eight on pricing of milk and milk products, about seven on seasonal production problems, and about five on studies for lowering marketing costs. Evidently considerable work will be done on each of the four major dairy marketing problems. Material received to date indicate no problem of duplication between states. Cooperative work has been indicated by several states in the Northeast on the problems of milk pricing. Competitive supply conditions among milk sheds indicates the need for a coordinated study involving the cooperation of research men covering such markets as Boston, New York, and Philadelphia, and also some of the more important secondary markets. Another example of coordinated cooperation is indicated in proposed studies for lowering marketing costs. In the Northeast area, the cooperating stations would not each conduct a similar study of marketing costs, but each would undertake a study of a separate step in the marketing setup so that the various studies would fit together to give a more complete answer as to methods of more efficient marketing from the producer to the consumer. For example, one state would study country milk plant operations, another would consider the operation of producer-distributors, and a third state would analyze distribution costs of the dealers in the larger cities. Inasmuch as the cooperative dairy marketing project is set up on an interregional basis, cooperation also may be achieved between areas, as for example between Vermont and Indiana, both of whom are contemplating studies of country plant operation.

How to Coordinate and Organize Most Effectively the Work of the Various States and That of the United States Department of Agriculture for the Work Ahead

The cooperation among the states has been excellent as evidenced by regional and interregional projects prior to 1946, and by the fact that agreement was reached not only regionally but on an interregional basis. The States in their planning and the work undertaken also have consistently invited in representatives from U.S.D.A. who have given valuable assistance that has been gladly received. The long-time cooperation by the States prior to 1947 made possi-

ble the preparation of tentative projects at an early date for 9b3 projects. Considerable delay, however, has been caused in undertaking these projects because of the delay of Congress in making appropriations and the subsequent allocation to States.

The State Experiment Station workers are awaiting with interest the development and announcement of plans contemplated by the U. S. D. A. in the work of the Federal Agencies, and how such plans will be coordinated with those of the States. The Administrative Advisor for the Northeast has received the Advisory Dairy Marketing Report which covered the entire field of dairy marketing, and the announcement received the last of August 1947 that $28,000, allotted by areas, has been tentatively scheduled from 10b funds for dairy marketing. Perhaps it would be helpful if the Experiment Station workers were included on the Commodity Committees appointed to advise with the U.S.D.A. in setting up their program of research. At least the State workers are anxious to learn how the Federal and State programs may be more effectively coordinated.

Many of our State workers will be starting work in the near future on their 9b3 interregional projects. If this work is to be more fully coordinated not only between states, but also with the 10b funds from the United States Department of Agriculture, plans should be developed promptly. The dairy marketing men of the Northeast probably will hold a regional meeting sometime in October to coordinate our projects to a further extent. I can assure you that we will invite representatives of Mr. Meyers office and Office of Experiment Stations who also are responsible for coordinating the dairy marketing research. At a special meeting last night Harry Trelogan of Mr. Meyers office indicated a desire for a more definite coordination of our cooperative work. I am sure that he will receive our fullest cooperation. We also hope that he can keep us more fully and promptly informed, through the Office of the Experiment Stations, concerning project plans by the various agencies in the U.S.D.A. Our State Experiment Stations will gladly cooperate on any reasonable requests or changes in plans that may be suggested in adequate time before projects get under way.

We trust and have confidence that a two-way road of full cooperation may be established between State and Federal Agencies. The marketing problems of the next few years may be greater than most people expect. Certainly the funds available for dairy marketing research are less than we had hoped for or expected. We must work together if we are not to be "too little and too late."

TEAM WORK IN MARKETING RESEARCH*

CHARLES W. HAUCK
The Ohio State University

APPLIED marketing research can score more touchdowns if the game is played on a commercial gridiron. If research and business are both on the same team, its ground gaining ability is considerable. A high order of teamwork is called for. Each can provide talents the other lacks.

Research agencies rarely can create the practical and sometimes elaborate distributive and marketing facilities required to test a given hypothesis, and it would be unwise to try to duplicate existing commercial facilities for this purpose if satisfactory arrangements can be made for the desired studies in cooperation with industry. Producers and distributors, on the other hand, rarely are skilled in research methodology, nor can they wholly free themselves from commercial distractions and short range interests.

Though both may be aware of the need for an early solution of some critical marketing problem, neither the researcher nor the distributor may be able to do much about it alone. Together they may make a very significant contribution to public and private welfare.

Much Food Wasted

Food wastes, for example, arising from damage and spoilage losses in distribution, are a matter of great concern both to the general public and to the industries that produce and market these products. It is shocking to find authorities agreeing that about one-fourth of the food we produce never is converted into human nourishment but is discarded or wasted somewhere along the line, on farms, in packing houses, in processing, in transportation and storage, in wholesale warehouses, in retail stores, in the homes of consumers and in public eating places.

In view of a world scarcity of food, these estimates are unsually staggering and provocative. Then, too, inasmuch as food that is salable and usable has to bear not only its own costs but also all costs and losses associated with these wastes, lower costs of distribution may be expected to follow if wastes are reduced. Challenging

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

re-examination of conventional practices at all points is called for to determine wherein these contribute to waste needlessly and which of them may be effectively modified and improved.

Research and Business Team Seeks to Reduce Wastes

In hope of reducing wastes and losses in the distribution of fresh fruits and vegetables, and with the further purposes of turning some of these items to self-service, and bringing to city consumers fresh products in vine-ripened or tree-ripened stages or at the optimum degree of succulence and palatability, the Ohio Agricultural Experiment Station early in 1945 entered into a contractual arrangement with the Great Atlantic and Pacific Tea Company whereby the wholesale and retail produce operations of the company in Columbus were thrown open to study and controlled experimentation. The company has helped to finance the project by an annual grant-in-aid to the Station. The contract has twice been renewed and is now in its third year.

This joint venture has provided opportunity to carry on the desired market research in a commercial atmosphere. The studies are being conducted in realistic surroundings. An attempt is made to come to grips with genuine over-the-counter marketing problems in the market place instead of under more or less artificial or simulated conditions in the laboratory.

Though the prime purpose of the research is to lower wastes and spoilage and to prolong the original fresh palatable quality of the produce, the more spectacular and conspicuous phases having to do with prepackaging in consumer units have caused the project to be known popularly as "The Columbus Prepackaging Experiment."

Prepackaging Emphasized

"Prepackaging" has certain descriptive weaknesses, but has come to be accepted as identifying the process whereby fresh fruits and vegetables are prepared for retail self-service. This two-fold process (1) subjects the produce to whatever sorting, washing and trimming may be necessary to prepare it partly or completely for kitchen or table use, and then (2) transforms it, either with or without precooling and refrigeration, into self-service items by packaging in prepriced, labeled, closed, usually transparent containers, each holding a customary consumer unit (a pound of snap

beans or tomatoes, a bunch or two of topped carrots, a head of cauliflower, etc.).

Facilities of the company in Columbus are serving as a sort of pilot plant. In the main the merchandise is received at the warehouse in the usual way from local and distant sources packed in conventional shipping containers—baskets, hampers, crates, and the like. A mechanized, air-conditioned packing room and a cold storage room have been set up in the warehouse and here the produce is removed from the original containers and is prepackaged in shallow paperboard trays or paper U-boards or transparent bags. The bags then are sealed by hand and the trays and U-boards are over-wrapped and sealed in moisture-proof transparent film by machine. Each package is automatically labeled, coded with the packing date, and marked with weight and price when sealed. The produce then is stored briefly at 40–45 degrees Fahrenheit while awaiting shipment to the retail stores.

The retail produce departments in the company's Columbus supermarkets have been equipped with open-top self-service type mechanically refrigerated sales and display cases, and these are stocked with prepackaged consumer units. Temperature in the display compartments of these cases (despite their open tops) is usually maintained at about 40–43 degrees. Reserve stocks of packaged goods are held at 37–40 degrees in large storage chambers in the base of the cabinets. The only attention required is for the retail attendants to keep the displays neatly arranged and to replenish them occasionally from the reserve stock, seeing that produce moves in the order in which it was packed.

The commercial facilities thus made available obviously could not have been reproduced by the Station for independent investigations. The research talents and technical training and equipment required were not to be found within the ranks of the company. So a partnership was created for the special purpose of attacking these related and important problems. Each party contributed something of its stock in trade, not the least of which is the prestige attached to its special position.

Results Published

The Station has insisted, of course, that the results must be released to the public. This was readily agreed to by the company, thus insuring that any beneficial findings would be made accessible

to all and expediting their widespread application. The nature of the investigations is such that almost of necessity they are carried on as in a goldfish bowl. Business competitors and much of the general public have continuously demonstrated an alert interest in what is going on, and to the credit of the company all have been welcomed impartially not only in the stores but also in the packing room.

As promptly as possible results have been published by the Station. Beginning with the May-June, 1946 issue of its Bimonthly Bulletin, now known as *Farm and Home Research*, reports of some phase of this research have appeared in almost every issue.

A detailed account of the results of this project is not the purpose of this paper. Only a few of the more significant matters can be touched upon here.

1. *Wastes Reduced*

Retail spoilage and damage losses have been sharply reduced by prepackaging and refrigeration. Comparisons of selected commodities were made in 1946 and 1947 between conventional bulk goods in open counters, not refrigerated, and identical items packaged in sealed, transparent consumer units and displayed in refrigerated sales cases. On six commodities-carrots, cauliflower, celery, sweet corn, head lettuce and tomatoes-retail losses in 1946 were 17.3 percent, by weight, for conventional bulk handling as against only 1.8 percent for prepackaged display. Repeated in 1947, these losses were 17.7 percent and 1.5 percent respectively. Aggregate losses recorded on 31 fresh fruits and vegetables in 1947 amounted to 8.2 percent when handled in bulk without refrigeration as against 1.8 percent when prepackaged and refrigerated.

How much of this gain was due to prepackaging and how much to refrigeration is not known, but experience has demonstrated that best results were attained with a combination of both. Refrigeration retarded ripening and deterioration; sealed transparent wrappers aided in prolonging shelf life and protected the foods from shriveling and weight loss due to dehydration and from pilfering and physical damage caused by handling. Prepackaging also contributed to sanitation and to merchandising advantages of brand identification, preweighing and pricing, and self-service.

Trimmings and damaged foods discarded in the prepackaging process amounting to about one-forth of the gross weight of produce

received had little bearing on the comparison. Amounts disposed of in that process were mainly excess leaves, tops, husks and stems left to protect the goods in shipment, inedible parts that otherwise would have been removed by the retailer in the course of conditioning the produce for display or by the consumer after purchase. Removal of these parts made no change in the number of salable units or in the quantity of edible food.

Prepackaging may be viewed as a processing operation in that the character or form of the product was changed in the process of converting the goods into self-service units. Trimmings disposed of in this operation cannot be considered in the same category as losses in bulk goods through trimmings and loss incurred by reconditioning while awaiting sale in the retail store, or eventual complete loss after repeated examination and rejection by patrons. Prepackaging did not create or increase waste; it only localized existing waste which bulk merchandising would have revealed at later stages—retail store and consumer's kitchen. The process may be credited with very real reductions of waste.

2. *Shelf Life Prolonged*

Retailers of fresh fruits and vegetables have a vital interest in what is known in trade parlance as the "shelf life" of the perishables they handle. Success or failure in the retail produce department is largely dependent upon the shelf life of the goods offered. The term may be defined as the period of time during which the merchandise after being received in the store remains fresh, attractive, and sufficiently appealing to patrons as to be readily salable without price reductions.

Interest of the retailer in shelf life arises from the close relationship it bears to his alternatives of (1) profits from a rapid turnover rate and large volume resulting from repeat sales to satisfied customers or (2) losses from reconditioning, price reductions, and disposal of part of his purchases in the form of garbage rather than by way of the cash register. He is fully aware that his margin of safety is narrow with soft fruits, leafy vegetables and others, and that potential profits may quickly change to losses, often through circumstances beyond his control.

In the hope of avoiding losses, he may limit his offerings to insufficient amounts or may confine his purchases to the less perishable items, or he may too long delay needed triming or recon-

ditioning and price reduction. Inevitably, this course can only result eventually in loss of trade. More wisely, he can adopt measures to speed his turnover rate and to increase his margin of safety through lengthened shelf life.

However indifferent producers and consumers may be to this very critical problem of the distributor, nevertheless the problem is theirs also. It directly or indirectly affects their welfare. The cost, quality, and variety of offerings avialable to consumers and quantities sold and prices received by producers are determined to a considerable extent by the manner in which the distributor conducts his business.

To lengthen shelf life is to lower losses. Reduced losses are a matter of general concern. Accordingly tests were run in 1946 and 1947 to contrast the shelf life of representative items both in bulk and in sealed consumer units, when held under room conditions, exposed on beds of cracked ice, and mechanically refrigerated.

The 1946 tests included 14 commodities-root crops, green and leafy vegetables, citrus and deciduous fruits. The 1947 tests covered snap beans, broccoli, cauliflower, celery, endive, head lettuce, and green peppers.

On the whole, mechanical refrigeration alone helped greatly in maintaining the salable weight and lengthening shelf life. Results obtained by prepackaging alone were about the same as with refrigeration alone in terms of lengthened shelf life and substantially better than with refrigeration alone in terms of maintaining salable weight. Packaging and mechanical refrigeration together retained the perishables within 95 percent of the original weight for periods ranging from 6 to 24 days; or in other words, from 2 to 7 times longer than any of the other treatments. This combination of factors extended the shelf life of all the products tested much more than any other combination tried in these tests. Sharing second position were prepackaged produce refrigerated with cracked ice and bulk produce under mechanical refrigeration.

3. *"Pay Loads" Can Be Increased*

Opportunities seem abundant for increasing pay loads in the shipment of some fresh vegetables by reducing tare weights and removing more of the inedible portions before packing and shipment. The project has no achievement to its credit in this direction beyond the accumulation of data disclosing some of these opportunities to reduce excess shipping weights.

During a 2 months period representative sample shipping containers were selected at frequent intervals from arrivals of 27 fruits and vegetables. Each was weighed and unpacked to determine its gross shipping weight, tare weight, weight of salable contents, and (in the case of prepackaged items) the weights of trimmings and discarded damaged produce.

Of the 16 commodities subjected to prepackaging, salable contents after trimming ready for kitchen or table use comprised, on the average, 71 percent of the gross weight when received at the wholesale warehouse. Tare weights averaged 14 percent and weight losses due to trimming and damage from decay, shriveling, mechanical means and other causes averaged 15 percent.

Cabbage, citrus fruits, dry onions and potatoes in bags showed tare weights of less than 1 percent, that is, over 99 pounds of produce were carried by less than 1 pound of package. At the other extreme, shallots or green onions in iced barrels required 41 pounds of package and packing materials to move 59 pounds of produce.

Head lettuce serves as an example. From western sources it comes to market practically the year around, packed in crates holding on the average some 5 dozen heads with snow ice between the layers of heads in the crates and weighing about 90 pounds per crate. Of this gross amount the crate, liner and ice (after arrival)—or tare weight—, averaged over 19 pounds or more than 21 percent. The loss from trim and damage in preparing the lettuce for retail display averaged almost an identical amount, or another 21 percent. The balance was salable lettuce. It weighed a little over 52 pounds or slightly less than 58 percent of the gross shipping weight. Obviously the entire cost of handling and distributing the lettuce had to be borne by approximately 58 pounds of each 100 pounds gross shipping weight, or in other terms, by 73 pounds of each 100 pounds of lettuce shipped.

Any improvement should be welcome that would reduce shipping weights to more nearly the weight of the salable goods. Measures that would lessen the need for bulky protective packaging and at the same time prolong the original quality and condition of the merchandise would be reflected in higher pay loads. That is, if the retailer did not have to throw out as waste any considerable part of what he pays for, if practically every pound of fresh fruits and vegetables delivered to him were salable and usable, his costs and profits could be distributed over the entire amount instead of hav-

ing the burden carried by 50, 70 or 90 percent of the lot. Transportation and handling expenses would be lower. Kitchen drudgery and garbage problems of the consumer would be simplified, and waste disposal services could be performed by the community for less cost.

4. *Approved By Consumers*

Ready consumer acceptance of prepackaged, refrigerated produce has been very encouraging. In certain retail stores results have been spectacular, both sales volume and net profits having risen after conversion from bulk retailing.

Overall dollars and cents results have been such that the company already has expanded the operation from 1 store in 1945 to all 10 of its stores in Columbus and 2 outside Columbus, and is now in the process of greatly enlarging and improving and further mechanizing its prepackaging facilities, and transferring them to a newly acquired building where they will occupy more than 10 times as much floor space. When this has been accomplished, prepackaged produce will be offered in all stores of this unit, almost 100, just as rapidly as they can be equipped with refrigerated cases.

In the meantime costs and returns have been subjected to continuous examination by means of a quarterly comparison of sales and expense records of the 10 Columbus stores against 10 other stores of this unit outside Columbus handling produce in the conventional bulk manner. Despite no increase in prices to consumers, savings and increased sales volume associated with prepackaged produce have more than paid the added costs. Yet cramped quarters and the resulting inefficient operation in the packing room to date prompt the belief that unit costs will be lowered after the expansion is completed.

Greater consumer satisfaction inspired by prepackaging and more sales volume at lower unit costs may mean eventually lower rather than higher retail prices. The retailer's costs and profits are extremely sensitive to any measure that permits them to be distributed over a larger portion of the produce he purchases, by reducing the amounts going out the back door as garbage.

Some Prepacking Done At Shipping Points

Prepackers are springing up all over the United States. Some are new, others are established concerns that are modifying their operations to include prepackaging. Some are located at points of origin, near the fields where the produce grows. Mostly, for the present at

least, they are in terminal markets near the retail stores and the consumers who use the goods. Among these pioneers are independent and cooperative groups of growers, shippers, jobbers and service wholesalers, chain and independent retailers, and specialized packing companies. Much experimenting is going on.

Opinions differ as to whether prepackaging is to be eventually a function of the shipper or receiver, and only time and experience can settle the question. Probably no one doubts the commercial practicability of packing so-called "hardware" items such as apples, potatoes, citrus fruits and dry onions in consumer units at distant sources. It has been going on for a long time. Technological advances already a reality or in sight may ultimately permit equal success with more perishable produce. But for the present, in order to insure freshness and good quality in prepackaged retail displays, it is necessary to trim and prepackage most goods after arrival in terminal wholesale and jobbing markets, and with some highly perishable items the necessity for a last look even requires a minor amount of prepackaging by the retailer. The development in Columbus to date is predicated upon the belief that for some time the final sorting and preparation and packaging will have to be done for the most part just before the goods go to retail. The company's investments in the venture are guided by that conviction.

Yet other suppliers are being encouraged to furnish as much as they can. A few items in limited quantities are being received in acceptable form and condition from time to time from both local and distant shippers. Ohio growers have supplied some prepackaged apples, peaches, radishes, carrots and sweet corn. West Virginia growers have shipped some prepackaged broccoli and cauliflower. Packers in Columbus and other nearby cities have furnished some prepackaged spinach, tomatoes and cut vegetable salad combinations. Experimental shipments of strawberries from Tennessee and peaches from South Carolina have been made to Columbus, and arrangements have been made for trial shipments of vegetables from Florida and California. The first experimental carlot of precooled and prepackaged California vegetables—broccoli, cauliflower, celery, carrots and head lettuce—is en route to Columbus today from the Western Growers Association's packing house at Molus Station, California. It will receive a thorough examination by our staff upon arrival, and sample packages will be kept under observation to determine how well and how long the contents remain usable.

Teamwork Needed With Industry And Other Research Agencies

All these shipments move through the usual commercial channels. The company's representatives negotiate for the merchandise and handle the accounting at both ends of the line in the customary way. In some cases however, in addition to the shipper, the company and the Ohio Station, still a fourth party has a hand in the transaction—the Agricultural Experiment Station in the State of origin. The experimental features of the shipments require supervision and control by trained research workers at origin as well as at destination. This introduces another very important aspect of the teamwork involved in the project.

If delivery of prepackaged perishables in good condition from distant points of production can be assured, gains may be expected to arise from the use of lighter packages and savings in shipping weights and transportation costs due to trimming at the source. If these potential gains are to be realized, much further experimentation is indicated.

More research agencies need to be tied in at proper points. More commercial interests should take a hand—not only packers and distributors, but transportation agencies, and manufacturers and suppliers of containers and packaging materials, mechanical equipment, refrigeration and precooling facilities, mold inhibitors and sanitation equipment and supplies, and others. If the research is to be done effectively and economically, it should be closely integrated and directed, with appropriate contributions being made by each of the participating research agencies and commercial concerns.

Teamwork Needed Between Social And Physical Scientists

However encouraging results to date may be, there are hazards and pitfalls at many points that dare not be overlooked. Much remains to be learned about prepackaging before this promising new industry can be said to have outgrown its infancy. Prepackaging introduces some new and intricate unknowns.

Distribution of fresh fruits and vegetables by orthodox means is none too simple, but when these goods are sealed in closed consumer units new physiological and economic complexities arise. This conversion process calls for more than a wrapping machine and a stock of packaging supplies. Problems associated with shipment and handling of such highly perishable items as tree-ripened peaches

or husked milk-stage sweet corn apparently cannot be eliminated by consumer packaging alone. They are even increased. Living, respiring plants or parts of plants cannot be tightly sealed in unventilated containers without creating new problems calling for new solutions.

Questions that remain unanswered are manifold and varied. They may be catalogued roughly as biological, technological, or economic, but for the most part are so interrelated as to be practically incapable of segregation. The subject merits the attention of the economist, but it also is crying for study by the horticulturist, the biochemist, the engineer, and other specialists.

Separate isolated attacks upon selected fragments of the problem are not likely to yield results in any reasonable time. A more realistic and fruitful approach would be to bring the talents and facilities of both the social and physical scientists to bear on the matter by means of a broad and closely coordinated program of research, thus introducing another form of teamwork.

Experience with this so-called "Columbus Experiment" to date has convinced us that whatever the contribution of the cooperating commercial agency, in a joint program of this kind the investigations must be directed by a qualified research agency. Though full consideration must be given to the commercial factors involved, nevertheless final decisions on problems to be explored and methods to be used must be made by competent, practical research personnel rather than by those whose first interest must lie in their commercial duties and responsibilities and whose training has been elsewhere than in the field of fact-finding.

Our experience has taught us also that we have no more than scratched the surface. Prospective social gains of much significance may be anticipated, provided the research is sufficiently comprehensive and imaginative, and provided the quarterbacking and the teamwork are good. Some gaps in the lineup need to be filled with a few of the brawny, skillful and eager players that so far have not been called in from the bench—industries with related interests, other state experiment stations, the U. S. Department of Agriculture, certain of the physical scientists.

The limited resources now employed in this project are no longer commensurate with the magnitude and complexity of the game. The stage has been reached where the team needs to be expanded and the playing field enlarged.

COLLABORATION BETWEEN MARKETING ECONOMISTS, ENGINEERS, AND OTHER SPECIALISTS*

R. W. HOECKER
Bureau of Agricultural Economics

MANY research workers in such fields as economics, engineering, plant breeding, and pathology find that, even though they work on different phases of the same marketing problem, they depend upon the producer or the distributor to combine their research results into a workable pattern. However, it is natural to suppose that producers and distributors usually act in self interest and seldom act at all if the change means reducing their profits. Often substantial savings in distribution can be realized only by reorganization or curtailment of certain agencies of the marketing system. Any such reorganization or curtailment of functions is likely to be met by opposition from the established agencies that are disadvantageously affected.

Research workers usually are not to blame for not taking a broader approach to the problem. Because much of the present research is done by graduate students and by other relatively inexperienced short-time workers, projects should be divided into small segments of a larger problem. But even though the administrator is fortunate enough to have experienced full-time research men on his staff, it is administratively sound procedure to keep projects relatively small so that results may be shown in a relatively short time. The shortcomings of most marketing research become evident when the researcher publishes his findings with little regard as to how the results will fit into the entire marketing system. Specialized workers in departments with specific fields to be covered find it difficult to appreciate fully much more than the one segment of an industry. If an over-all approach is to be taken in the solution of marketing problems, the initiative must come from those individuals who are responsible for the direction of the research. They must furnish the organized leadership and the research must be integrated under their direction so that when the project is completed the results will fit into the marketing pattern.

The marketing economist must perform a further function than

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

research on specific parts of a problem. A principal determinant of the success or failure of any business is the correct combination of productive factors. This is as true for the distribution industry as it is for the production industry. The marketing economist must be to the distribution industry what a farm-management specialist is to growers or what the production manager is to the factory.

The function of the marketing economist is to make an efficient pattern out of all steps in distribution as well as to improve the individual steps. The distribution mechanism is delicate and complicated and a change in one part of it may require adjustments in many other parts. In practice, even though the private agency wishes to change its way of doing business in favor of an obvious improvement, it may be prohibited from making the change by the reluctance of other agencies to cooperate.

The effect of change upon the marketing system means that research workers should be in a position to plan their projects and to fit their results into the distribution pattern. Considered by themselves, the researcher's results may at first appear the best answer to a particular problem but, when the entire industry is considered, the better solution may be one that appeared much less desirable at first examination. The plant breeder becomes interested in growing the variety of potato that yields the most under the given set of climatic, soil, and disease conditions. The resulting variety of potatoes, however, may not ship satisfactorily or it may be unacceptable to the housewife. When all the facts are known and each is given proper evaluation, a better variety of potatoes for the area in question may be one that yields considerably less than the variety first considered. The variety finally selected may have been known only to the plant breeder, or after knowing the full facts, he may have had to develop an entirely new variety which probably he would not have done had he been working independently.

In the last several years, the Bureau of Agricultural Economics has applied the above principles to several of its studies. These studies are roughly divided, mainly on the basis of degree of complexity of the cooperative arrangements, into three groups. For purposes of clarification, an example of each of these groups is given. A Bureau study on air transportation may be used to illustrate the first group, that is, collaboration of the marketing econo-

mist and one other specialist, the two of them issuing a joint report. A study on citrus fruits illustrates the second group of studies, that is, collaboration of the marketing economist with other specialists in the Department of Agriculture. A current study on prepackaging illustrates the third group, that is collaboration of the marketing economists with other Department specialists, State college specialists, and different segments of the trade.

Research of the BAE on air transportation of agricultural perishables furnishes a clear-cut example of the first group, In the fall of 1943 it was suggested to the Bureau that the many cargo planes which would be available at the close of the war might make feasible the establishment of a sizable air-freight business and we were asked to investigate the possibilities. At that time, air express rates charged by the scheduled airlines ranged from 60 to 70 cents per ton-mile. Obviously, practically no perishables and little else would be hauled at these rates when rail express rates were currently 5 to 14 cents per ton-mile. An engineer who had also a background in airline operation was consulted. It was his judgment that the current rates were much higher than necessary to cover the costs of operating a fully loaded cargo plane. A study was planned, the title of which "Postwar Air Transportation of Fresh Strawberries and Tomatoes from Florida to Detroit, Michigan." Before the potential freight volume could be estimated, it was necessary to arrive at a probable ton-mile rate. This was done by making four principal assumptions, all of which appeared reasonable. These premises were:

(1) The air carrier is a private operator with eight C-47 airplanes in continuous operation.

(2) Availability of the specified produce at the growing centers will allow a 100-percent load factor to Detroit with an average 75-percent load factor on return trips.

(3) Completion of the trips scheduled is 95 percent.

(4) Air-cargo operation is continuous throughout the year. "Out-of-season" produce from other centers and other air-cargo operations are substituted when the transportation of strawberries and tomatoes by air is not in demand.

Based on these premises, an aircraft consulting enginner was employed to compute costs of operation. The Bureau cooperated by furnishing all relevent material regarding packages, stowage, and schedules. The engineer's results indicated that tomatoes and

strawberries could be hauled for 10 to 12 cents per ton-mile, provided all the premises were fulfilled. The computations made by this engineer were checked by two other competent engineers. The report of this study caused new thinking with regard to air cargo, and I believe it did much to reduce rates from 70 cents to their present low of 9½ cents per ton-mile.

Some studies which illustrate collaboration of the marketing economist with other specialists in the Department of Agriculture originated in the Department's working group on Conversion of Marketing Facilities and Methods. The Bureau led in organizing studies undertaken by this group. The procedure followed was to organize a committee of specialists in each of the various phases of the problem to be dealt with. After the outline of the report was prepared and discussed at some length by the committee, each specialist was assigned the portion of the report which he was best qualified to write. After all sections of the report were completed, one member of the committee assembled the report. This required the elimination of duplication, rewriting of parts, and in general, the making of a readable report.

A specific illustration of these reports is the one which related to "Readjustments in Processing and Marketing Citrus Fruits." The section on potential supply of citrus fruits was contributed by specialists from BAE who were located on the West Coast. Personnel from the Fruit and Vegetable Branch of PMA contributed most of the data on costs, marketing channels, and practices. Specialists from the Bureau of Agricultural and Industrial Chemistry submitted the basic materials on new methods of processing citrus. The section dealing with world production and trade of citrus came from the Office of Foreign Agricultural Relations. The Compliance and Investigation Branch of PMA contributed the section on costs of processing concentrates. The Farm Credit Administration furnished materials on packaging, containers, and grading. Finally, the report was assembled as a whole, with the help of all members of the committee, by a representative of the Bureau of Agricultural Economics.

The Bureau's work on prepackaging fruits and vegetables illustrates the more complicated cooperation between various Government agencies; State colleges; package, film, and machinery manufacturers; growers; transportation agencies; wholesalers; and retail

distributors. The early prepackaging work of the Bureau was done in Kearny, New Jersey, with a chain store company. It was necessary to work with the company engineers to plan a packaging room. As soon as the operation was started, it became apparent that much additional information was desirable regarding temperature conditions in refrigerated cases and storage rooms. The results of the series of tests by Department of Agriculture pathologists were used to redesign refrigerated display cases so that more effective refrigeration could be obtained. At the same time, these pathologists made tests of the effects on the produce of various transparent films. These results were used immediately by the chain store company as guides in their selection of films. Film manufacturers used the results in modifying the properties of their films to make them more suitable. Time and motion studies were made in the packing room to ascertain the more efficient packing methods.

While this work was going on, it was also found desirable through tests to modify the merchandising of the prepackaged produce in the retail stores. In place of two to four produce clerks, it was found that more efficient distribution could be made on a self-service basis, with only one clerk needed to keep the displays in order.

This particular report emphasized the importance of not stopping at the wholesale-retail level. As a result of the study, it became apparent that economies in distribution are possible if the produce is packaged in the production area or if it receives such special preparation in the production area that it is ready for prepackaging at the terminal market. To investigate this further, cooperative arrangements were made with the University of Florida with Florida shippers, with the University of Maryland, with an independent packager and distributor in Maryland, and a chain store company. Plans are to expand the research team, now composed of specialists from these organizations by the addition of an engineer, an economist, and a biologist to be placed directly in the plant of the Maryland packager and distributor.

This plant packages both locally grown produce and produce shipped from Florida. The packaged produce is distributed to Philadelphia, Baltimore, and Washington. Bureau representatives are not attempting to study consumer acceptance of the produce in all these cities but they are making an intensive study of it in

seven Washington chain store outlets. The chain store officials have agreed to see that their produce managers order enough of the packager's output to keep these seven supermarkets stocked at all times. The chain has given the Bureau authority to experiment in merchandising and, to a limited extent, has given leeway to experiment in pricing. The seven stores serve as a retail-store laboratory. At the same time, biologists from the University of Maryland pick up frequent samples from the stores to observe and study the relative keeping qualities. These frequent checks have located trouble and have helped to stop it before it became serious. A horticulturist and an economist from the University of Florida helped the Florida grower and shipper to compute his costs and to find the most efficient methods for shipment.

Results obtained from the group's efforts show, for example, that if cauliflower is properly prepared for shipment in Florida by the removal of all outer leaves and the excess butt, about 40 pounds of curd can be packed in a 50-pound shipping container. This compares with only 7 to 10 pounds of curd in a 50-pound shipping container when the cauliflower is shipped in the conventional way. Results obtained show that sweet corn prepared in the production area for prepackaging at the terminal can have its shipping weight reduced about 50 percent. The husking of the corn also made precooling more rapid than before. When the corn is husked and its tip and butt are trimmed off, many short ears of good quality that are not long enough to pack in the regular way can be used. The short ears are cut down to uniform length for packaging, whereas previously these ears were a loss.

In every instance in which the Bureau has worked on a project in collaboration with other specialists and agencies, the marketing economist has been the coordinating specialist. Usually the marketing economist did most of the planning of the study, doing what research he was qualified to perform and requesting help from the other specialists in those fields in which he was not qualified. Very rarely was a request for help refused. The study was usually complete enough to cover all of the important ramifications of the marketing of the product. The research which was done was directed toward solving specific parts of the complete problem. Results were interpreted in terms of their effects on the complete marketing pattern.

It is not intended to represent that close collaboration of research workers in different fields is a new method of doing research. This has been done in different degrees by many researchers. It is maintained, however, that in the field of marketing research there has been too little cooperation among specialists. If more were done by all specialists concerned with marketing—the term "marketing" is used here in the broadest sense—the research would be more effectively directed toward related problems and the results would more effectively used. Marketing economists would probably soon be guiding industry rather than reporting on results obtained by industry—the position in which they now find themselves.

DEVELOPMENTS IN POULTRY MARKETING RESEARCH*

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IT IS difficult to present my topic without the feeling that I am trespassing upon ground which rightly belongs to recognized research people. My field has not been in fundamental research work. As an extension worker for 15 years, however, I learned that a major part of my job was making certain that the results of research work were made available to farm people who were not attending resident schools.

Thus extension workers have helped in the past to apply research findings at the grass roots where they would be of direct value to the farmer. Most of us will admit, I believe, that the maximum possibility for usefulness in this field, so far as marketing is concerned, has been hampered by the lack of factual materials resulting from research studies.

About 3 years ago the Extension Service in Oklahoma held a series of regional meetings with country workers and encouraged them to get more extension work in marketing into their county programs. One of the first questions of the county workers was "Where are the studies on which we are to base our Extension programs?" These workers commented further that in other fields there is factual information as background for programs while in marketing such factual information is very often missing.

The one point I wish to make is that, for the first time, money under the Marketing Act of 1946 is available and allocation has been made in such a way that by careful planning on the part of the several interested agencies a complete study of marketing problems can be developed. A co-worker and I recently attempted to assemble an extension guide on milk marketing based upon studies made by several neighboring Experiment Stations. Although the studies contained excellent material when considered independently, they were not complete enough to make possible a full analysis of any one designated period. It was difficult or impossible to tie all of the studies together into a complete story. There was no way of coming close to a complete coverage of the marketing

* A paper presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 10, 1947.

field. The situation is still more serious in this respect in the field of egg and poultry marketing. We find many gaps in research and at some points some duplication.

I believe we should start our activities under the Marketing Act of 1946 by assembling, in as complete form as possible, information showing the facilities now available and the methods now being used for marketing poultry and eggs. We should have quantitative data regarding the volume of these products moved out of each of the several important geographic areas at various seasons and regarding the costs of marketing, including loss from grade deterioration. While purely descriptive research is often criticized, it does serve as a basis for affecting savings in the marketing process. Much of this type of material has been assembled for other farm products, but little is available on poultry and eggs.

I think I can illustrate my point best by talking with you a bit about various steps in egg marketing and suggesting how I think the job might be done completely by careful planning and by cooperation between numerous interested agencies.

The first step, of course, in handling eggs is moving them from farms. We have many problems in this step of the marketing process—problems of quality conservation on the farm and problems of quality conservation and efficiency in handling them through to the first large concentration point. Within the past 3 or 4 years I have had an opportunity to meet, on numerous occasions, with college people from Southern States. Frequently they have commented that there was an insufficient volume of eggs in certain parts of their State to develop an efficient marketing program. On one such occasion, I suggested that we visit the panhandle of Florida and look the situation over during the spring season. We found that in each trading center there were 5 or more buyers of eggs, none of them independently handling a sufficient quantity to support a profitable marketing program; however, the total volume in each trading center was sufficient to do so. So, apparently, we need background information at this point of the marketing system. We all know that eggs are sold by farmers through grocery stores, filling stations, and numerous other outlets. How can this step in our marketing procedure be improved? Some of the types of information which we need, it seems to me, are losses in quality under the various systems of handling the eggs, methods for reduc-

ing these losses, costs of each marketing step, and how these costs can be reduced.

The next step in studying the marketing process might be at the points where eggs are packed for carlot shipments. In the heavy production States such points are numerous; in some of the lighter production States there are only a few of them. At these packing centers eggs are usually assembled and placed in cases for shipment by rail or truck to consumption centers. This is particularly true, of course, in the surplus-producing areas of the country. In other production areas, such as the New England States, eggs move from these points in trucks going direct to wholesale houses in consumption centers. We need to know costs, losses, and deterioration in quality, and other related facts in this step of the marketing process.

The third step is handling in the wholesale centers, such as in Chicago, Milwaukee, Boston, New York, and San Francisco. The previous steps, I think, can all be studied by the Experiment Stations working within their State boundaries. As the eggs move on into the wholesale centers the job is either too large to be tackled by personnel at the Experiment Stations or the Experiment Station personnel are limited to doing such work in their State. It is here that I think we can begin to see the advantages of coordinating our program between Federal agencies and the Experiment Stations. I have met a number of times with the representatives of the North Central Experiment Stations and with the New England Research Council. Both of these groups are interested in coordinating the marketing research work of the Experiment Stations concerned with the various commodities.

In the Midwest the egg market is built, to a great degree, around Chicago. Marketing practices, fortunately, are not influenced by State lines. The Wisconsin producer of eggs is just as much affected by what goes on in Chicago as the Illinois producer, maybe even more, yet the personnel of the Wisconsin Experiment Station are probably not in a position to study conditions in the Chicago market. There are a number of Federal agencies authorized to do research work and interested in doing research work on the various commodity marketing problems. In poultry, for example, the Bureau of Agricultural Economics is interested in certain phases of the research work; the Marketing Facilities Branch of PMA is in-

terested in studying the facilities used for handling poultry products; the Farm Credit Administration (Research and Service Division) is interested in studying cooperatives; and the Poultry Branch of PMA is interested in all the various phases of poultry marketing problems. My suggestion is that we team up together in our research studies and agree which part of the over-all work each agency should do, thereby doing a complete job rather than doing the job "bits and pieces." Experiment Stations naturally should study, and would want to study, farm procurement, handling in the concentration points in production areas, and marketing conditions in what might be called secondary markets. The Federal agencies could study concurrently with Experiment Stations the marketing conditions in wholesale centers. Thus, a complete picture of the marketing process through all its steps would be provided.

There are a number of proposed projects submitted by the Experiment Stations and the several Federal agencies calling for cooperative effort. For example, the North Central Experiment Stations have submitted a project entitled "The Development and Analysis of Improved Techniques for Marketing Eggs." This project suggests that certain phases of the problem be studied by the Experiment Station and other phases by the Production and Marketing Administration and the Bureau of Agricultural Economics. It is this type of coordinated activity that I believe will prove most useful in discharging our responsibilities for research under the Research and Marketing Act of 1946.

RESEARCH IN GRAIN MARKETING*

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ECONOMIC research and in particular grain marketing research have efficiency, reflected to society, as a major objective. This is the combination of marketing activities with other production activities to supply goods and services in the most efficient manner in line with the desires of society. Relatively new, the field of agricultural marketing research has tended to emphasize, since its beginning, such subjects as (1) methods of handling products, (2) marketing structure, (3) internal efficiency, and (4) inter-unit relationships.[1]

A quick survey made since this paper was outlined indicates that there is relatively little grain marketing research now in progress. That now underway seems to be mainly a study of business operations of elevators in which margins, expenses, earnings, membership, sidelines, accounting methods and the like are analyzed. It has been limited largely to the country market level. Continued information of this type is needed but some changes and additions can profitably be made. A limited amount of research has been done further along the trade channel toward the consumer. It is my purpose to show some techniques which have been used in grain marketing research and to suggest grain marketing problems needing solution. Techniques discussed here are somewhat limited in application but might suggest experimentation by others.

Fixed-Variable Costs. Much of my research work in grain marketing has been related to *integration.* One project dealt with the operations of a cooperative elevator federation. The study was mainly of the business unit type with considerable attention given to receipts, expenses, and earnings. It seemed incomplete to discuss costs just in terms of totals, including unit costs. Some sort of an indicator of how costs would behave under varying conditions seemed desirable but difficult to accomplish. One tool which was developed is the *Fixity-Gradient.* Costs were considered to vary from com-

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[1] H. B. Price and John M. Cassels, "History of Research in Marketing and Current Trends" in *Research in Marketing of Farm Products,* John D. Black, Editor, Social Science Research Council Bulletin No. 7 (New York: Social Science Research Council, 1932), pp. 12–20.

pletely fixed at a point in time to completely variable as time approached infinity. The way they varied between these two extremes was of course dependent upon the characteristics of a particular firm. In a specific problem one might wish to know how rigid the costs of the firm are. From records and aided by estimates of management one can calculate the shares of costs which are fixed for a series of periods of time, all having the same starting point.[2] By connecting these points a continuous *Fixity-Gradient* curve is obtained. For some types of study just one period of time may be sufficient—as, for example, classifying as fixed all costs extending for more than a year and all others as variable. It is essential to remember that costs are fixed only with reference to a period of time and the curve shows the relative fixities for a series of periods of time.

In the published note on the *Fixity-Gradient* the following was given as the use that might be made of it:

"The major use which can be made of the *Fixity-Gradient* curve is as an aid to management in planning future operations of a firm.

1. It aids in showing the rigidity of costs in a future production period, and in suggesting a possibility of cost adjustment.

2. With a given set of conditions and costs, it makes possible approximations of costs under future operating conditions.

3. The curve shows that the fixed and variable shares of cost are a schedule, just as supply, may be represented by a schedule.

4. The gradient helps explain why a firm may or may not hesitate to make a heavy long-term fixed investment because of the uncertainty of the future—in terms of the market and related conditions.

5. It may act as a guide to a firm that wants to keep its costs within a given flexibility range—to keep its curve below a certain maximum or norm curve which may vary with business conditions."[3]

Hedging Effectiveness. In case detailed records of hedging transactions are not available or their analysis might be too involved an estimate can be made of the effectiveness of hedging operations of a firm. The number of bushels effectively hedged is determined by dividing the gain in the futures account or options by the drop

[2] Adlowe L. Larson, "The Fixity-Gradient: A Tool for Fixed and Variable Cost Analysis," this JOURNAL, Vol. XXVIII (August, 1946) pp. 825–834.

[3] *Ibid.*, p. 834.

in inventory price per bushel from the beginning to the end of the period considered. This figure divided by the number of bushels owned for the period would give the fractional amount effectively hedged. If we want to express the fraction as an *index of hedging effectiveness* in percent it would be

$$I_{he} = \frac{(\text{gain in futures account}) \times 100}{(\text{drop in inventory price})\ (\text{bushels inventory})}.$$

In this case the inventory in bushels should be a weighted average. If the inventory did not change in the period the index might be expressed

$$I_{he} = \frac{\text{gain in futures account}}{\text{loss in inventory}} \times 100.$$

If no commission or handling charges are included an index of 100 would indicate complete hedging coverage. An index of less than 100 would indicate less than full coverage and one of greater than 100 greater than full coverage. Giving emphasis to the necessity of tabulating signs correctly is the fact that the index might be negative. This would mean that the futures operations actually added to instead of lessened the speculative load.

The index has some weaknesses which become evident when (1) price changes between beginning and end of the period are small, (2) the size of the inventory changes widely within the period,[4] and (3) the period becomes so long as to cover up market changes.

Mixing Gains. There is nothing unusual about this method of approximating gains from mixing in a market or for a given firm in that market. Records of the cars in and cars out can be secured. If the numbers of each are approximately the same no major problem arises for it can be assumed that the increases in grade arose from mixing or some other process. If the numbers are appreciably different with the numbers of cars in exceeding those going out a check would need to be made to see if some of the wheat coming in was actually not being shipped out by rail—i.e., milled, stored, or shipped by truck. If some of it is not shipped the percentages by grades will probably not be affected. If, however, the difference is

[4] This could be corrected, however, if inventory amounts are available by dates.

accounted for by not unloading incoming cars a correction may be necessary in which these cars are eliminated. To translate these gains in grade into monetary gains it will be necessary to account for shrinkage and market price differentials This estimate may be done by multiplying the net numbers of cars gaining a grade or grades by the price differentials between the grades and totaling the products.

Single vs. Multiple Unit Elevator. A question which we have recently been asked is, "Which is the more effective arrangement of cooperative elevator operation—as single units with elevators operating at only one point, or as multiple units (centralized) with elevators at several points?" This problem we are approaching mainly with the idea of finding the method which permits the lowest marketing costs with adequate marketing services.

To start, a detailed study is being made of one multiple-unit organization to secure a thorough idea of its operations, costs, and procedures. This, it is hoped, will allow us to anticipate procedures which will be used in analyzing 2 or 3 other multiple units and perhaps 15 or 20 single cooperative elevators.

While other factors will also enter in, a major effort will be made to separate items responsible for relatively lower costs. A strong federated sales agency is considered as a given condition to all, so little attention will be directed at sales outlets of the organizations. We intend to project costs for all on a comparable basis. For example, we expect to compare costs of a multiple unit with costs that each unit making it up would have if operating separately. Likewise, a comparison of these latter costs with costs of single elevators will be made. Similarly, an attempt will be made to form multiple units out of groups of single units and compare their costs with those of the individual units. Then these synthetic multiple unit costs will be compared with those of the operating multiple units. We hope at least to secure some basis for determining whether single or multiple units are the more suitable to a particular market area.

Marginal Analysis. The marginal analysis is an aid in checking the effectiveness of business operations of grain marketing agencies. A question we are interested in is, "Are marginal cost and marginal revenue equal?" It is desirable to know, therefore, if earnings of an organization can be increased, for example, by changing the volume handled. Obviously, this type of study cannot be made by checking

changes of very small sizes. For example, in the case of grain storage, one might calculate the extra total costs of storage and extra total revenue from storage which come with the building and use of extra storage space. This is not the common point-rate concept of marginal cost but rather "differential cost" which has more application to reality. Clark states:

"When a decision has to be made involving an increase or decrease of n units of output, the difference in cost between the two policies may be considered to be the cost really incurred on account of these n units of business or any similar n units. This may be called the differential cost of a given amount of business."[5]

This type of analysis may show that marginal cost is less than marginal revenue so that an organization may secure greater earnings by increasing volume. Although this may indicate a larger desirable volume, expansion of facilities may not be justified, for the market area may be restricted to an area presently served. In our study of the cooperative grain sales agency, for example, marginal or differential revenue was greatly in excess of corresponding costs. Actual physical limitation of the market area tended to restrict expansion—however, storage capacity has recently been increased by over one-half.

Technique Needs. Perhaps one of the greatest weaknesses of workers in marketing research is their failure to develop new techniques—new methods of solving problems. Imagination is in many cases lacking. Two major suggestions might be made to the researcher:(1) continued reading in economic theory—particularly that dealing with theories of production, value and price and (2) a study of mathematics and statistics. The researcher should know at least a few aids which statistics has to offer and to whom he can go to get information needed. As his knowledge of the field of statistics expands he will be better able to design his work so that significant results can be obtained. Marketing work is almost completely devoid of statistical significance tests in spite of the fact that small samples are frequently used.

Possible Studies. There is room for a wide variety of studies in the field of grain marketing. Some old studies need to be repeated but in the main investigations could more profitably be turned in other directions reaching from the farm on through to the con-

[5] J. M. Clark, *Studies in the Economics of Overhead Cost* (Chicago: University of Chicago Press, 1923), p. 49.

sumer. A list of projects, certainly not all-inclusive, might include the following:

Storage. Several aspects of grain storage need investigation. Where should grain storage be located—at the farm, country point, or terminal? How will the long-run transportation situation influence this? If all costs are considered which arrangement is the most economical?

Transportation. There is very little information on wheat freight rates. A general picture of the entire transportation problem together with a series of more specialized studies is needed. Men who have had extensive experience as rate men would be needed as cooperators in this field.

Standardization. There is a feeling among some people that the system of buying wheat on existing grades is antiquated. They may say that some higher grades are needed, that protein content is not accounted for, that the grade may have little relation to milling and baking qualities. This last item particularly needs investigation. It is questionable whether educational programs to grow "approved varieties" will do the job. It may be necessary to sell, and consequently identify and grade, wheat by varieties. A problem of direct concern to elevator managers is what to do with wet wheat. The present system of harvesting may have forced this problem almost permanently on to the elevators.

Market News. While the need may not be so great for wheat as for some other commodities, an investigation of the possibilities of extending market news with grading down to country points is in order. As a part of this, checks would be made of possible gains to farmers as well as of costs of the service.

Marketing Costs. Marketing cost studies will continue almost indefinitely. They could profit from better techniques which would permit somewhat reliable estimates for the future—not just an average price that occurred in some period in the past. There is also a place here for the use of motion and time studies.

Price. There is room for several studies in this field beyond those ordinarily made. It seems necessary first that studies of competitiveness of markets at different levels be made. A determination of the ways in which price structures are integrated is desirable. What factors influence price differentials and to what extent—horizontally and vertically under different competitive conditions? A special phase of this might be a study of the factors influencing the size of premiums. Of concern to farmers with a prospect of declining prices is the question, "Are margins necessarily more sticky than prices?"

Monopolistic Competition. Little stress so far has been placed on monopolistic conditions. While it may not be feasible for most research agencies to publish complete studies of this type they are nevertheless needed. This research would be directed toward the idea of reflecting to society the gains from marketing efficiency.

Policy. There seems to be need for continued study of the grain economy

with respect not only to the rest of the agricultural economy but also to the nation and the world. So many ideas might be investigated but they would likely include questions of price and production and supply controls.

Integration. There seem to be research possibilities in investigations of integration in marketing. Integration is commonly thought of as including the ownership and control of two or more steps in the trade channel—usually successive. It might just as logically include working relationships and practices of successive firms operated by different parties, who may to some extent be operating as a unit. The entire system needs study to find what arrangements bring about lowest costs and permit them to be reflected on to society—but small segments of it, as the single vs. multiple unit, become a part of the whole.

Consumer Preferences. While we may think that there is a fairly definite ceiling in the amounts of grain products which might be used by consumers our knowledge of consumer preferences for grain products is very limited. Some attention might, therefore, be given to their preferences—the grain, the packaged goods, the bakery products.

Cooperatives. As cooperatives are a major market outlet for grain products a considerable amount of marketing research of their practices will continue. The fact that data are readily available from them encourages the amount of research work among cooperatives at local and terminal points, and provides somewhat of a measure of the extent to which efficiency is reflected to society.

A summary of the possibilities of grain marketing research would indicate that much has been gained from research of the past, even though a large part of it may have appeared to be descriptive. There seems to be a dual challenge to the researcher (1) to develop projects which will indicate how society and members of it will benefit most and (2) to devise techniques which will permit more complete and more objective analyses than are now possible.

CARCASS GRADE AND WEIGHT STUDIES IN MARKETING LIVESTOCK*

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THE carcass grade and weight method of selling livestock has recently evoked considerable interest among marketing researchers of the corn belt area. The successful experiences of the Canadians, who first adopted the carcass method of selling hogs on an optional basis in 1934 and made its application general in 1940, have led many agricultural economists and animal husbandmen to raise the question of whether or not such a system would net significant advantages over the present live weight method in this country. As a result, investigations are being carried on presently at a few midwestern institutions.

What are the advantages that might accrue from the adoption of such a system of selling livestock? The first of these might be called the qualitative improvement in the competitive pricing mechanism. Sale on the carcass grade basis would provide a more accurate language for price quotations. It would raise the level of producer information concerning the worth of the marketable product. It would place the producer in a stronger competitive position. The price structure over the entire market area would then be more closely interrelated and certain of the spatially erratic movements in the price surface might be minimized.

If carcass selling proves to be desirable and practical another important result might be an economy in the costs of assembling livestock up to the slaughtering plant. A more efficient pattern of resource use among livestock producers would also follow, if carcass selling leads to more equitable returns for quality production, for their productive services would then be more effectively integrated with consumer preferences.

The general problem upon which the research worker must focus his attention as he conducts his investigations in this field is to determine the desirability and feasibility of selling slaughter livestock on the carcass weight and grade basis. The pertinent questions here concerned are: (1) How accurately does the present method of marketing livestock reflect back to the producer the

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value differences to the packer of different animals? (2) To what extent would the carcass basis of sale more accurately reflect these value differences to producers? (3) What are the economic and physical limitations to sale by this method and what are possible solutions to them?

At this point it becomes expedient to discuss the approach for cattle, calves, and lambs separately from that for hogs. Beef, veal, and lamb carcasses are sold in wholesale trade and government grade standards are used for these classes. This is not so in the case of hogs. Moreover, in purchasing cattle—and to a somewhat lesser extent, calves and lambs—buyers in making their offers do attempt to arrive at the actual value by first estimating the grade of the carcass, and accordingly its value, and then estimating what proportion of the live weight the carcass comprises, the familiar dressing percentage or yield. On the other hand, hogs tend to be bought at prices approaching uniformity within a given weight range.

From the foregoing it is evident that one approach for cattle, calves, and lambs might center on an analysis of these estimates of yield and grade made by the buyer. More precisely, this analysis concerns the departures of these estimates from the actual yield as determined from the carcass weight, and the actual grade as placed on the carcass by the government grader. These departures represent the substance of the buying errors. In their analysis, they can be subjected to the usual measures of dispersion.

Yield and grade, however, are strictly physical concepts and the measures of dispersion thus will, of course, be expressed in physical terms. The economic analysis begins when prices are assigned the various carcass grades. It then becomes possible to compare the estimated price of the animal with the actual value as determined by the weight and grade of the carcass. Through the use of dispersion analysis the probabilities of the price paid being within any given set of prescribed limits of the actual value can readily be determined. Furthermore, the price error thus determined can be broken down into its component parts, the portion of the price error due to errors in estimating yield and the portion due to errors in estimating grade. By calculating the dispersions of each separately, the relative contribution of each to the total price error can be measured.

In analyzing the distribution of errors mentioned thus far it would be fruitful to examine and compare the dispersions of differ-

ent classes and grades within the particular species. Striking differences may be found, for example, between choice steers and cutter cows.

In order to measure the extent of errors in estimating grades, it might be desirable to express the grade estimate and the actual grades in terms of one-third grade intervals. In the parlance of the market report, the three divisions of the Good grade carcasses are Top Good, Middle Good, and Low Good. More precise analyses may be made with this more refined classification.

Although the major emphasis in studies of this type is properly placed upon the carcass and its value, it must be remembered that the carcass does not constitute the entire value of the slaughter animal. Another broad area of investigation is an analysis of the by-products from the slaughtering process. Of these the most important are the hide in cattle and calves and the pelt in lambs. The composite value of these and other by-products generally exceeds the cost of slaughtering and thus provides an incremental value above that of the carcass alone. Especially is this true in the case of sheep and lambs. Since the value contribution of these by-products, particularly the internal fats and edible organs, might vary considerably by grade, weight and sex of the animal, there would be considerable merit, therefore, in determining the approximate yields of the various by-products in order that differential credits by grade, and possibly by sex, can be calculated. The pelts of sheep and lambs present a special problem. Because of the great variation in length, quality, and weight of fleece as these animals are marketed, their value contribution to the total value of the animal is subject to rather extreme variability.

The possibility of selling hogs by the carcass method has awakened considerably more interest in recent years than has been the case with respect to cattle, calves, and lambs. The investigational approach, however, appears to be less straightforward. It is handicapped at once because acceptable standards for grading hog carcasses do not exist. Since hog carcasses are normally disassembled within the packing plant and merchandised in the form of a number of component wholesale cuts and trimmings, carcass standards have not been developed. This single fact marks out the initial and perhaps the most important area of research—that of establishing standards which classify hog carcasses according to

certain physical attributes which in turn have some bearing on economic value.

The various wholesale cuts and trimmings differ considerably in value. The hams, loins, picnics, Boston butts and bellies are all relatively high value cuts. Hog carcasses differ in value according to the proportions of these high value cuts they yield on the cutting floor. The heart of the standardization problem, therefore, is to determine whether or not some quantitative, physical measures of the carcass can be found that appear to have a functional relationship with the proportions of these high value cuts in the carcass and which also can be used to describe the carcass objectively.

Certain measures have been suggested as having enough merit for at least exploratory analyses. These include average backfat thickness, length of body, length of ham, thickness through the shoulders, thickness through the hams, and belly pocket thickness. Measures other than these may well be worth investigating. The composition of the carcass can only be determined by the cut-out test. The conventional regression analysis is quite satisfactory for arriving at the primary functional relationships. Multiple correlation might provide a useful tool in analyzing the relative merit of the different measures. The several simple regression and correlation coefficients can be compared with their respective partials to ascertain the independent relation of each to the dependent variable. If the simultaneous use of several measures within the grade standard is contemplated, this latter step will be of considerable importance.

The sampling procedures applicable to hog carcass studies differ in emphasis from those usually followed. The primary concern is not in sampling carcasses representative of different seasons of the year or of different producing areas. It is rather in sampling adequately, within prescribed limits, the total range of physical variation regardless of the numbers in which these various physical categories come to market.

To analyze butcher hogs weighing from 180 to 300 pounds alive one might select carcasses weighing from 120 to 220 pounds. These carcasses could be classified by weight into 10 groups, each having a 10 pound range, and the respective regressions calculated within each of these fairly narrow weight ranges. The importance of this weight classification should be apparent when it is remembered

that the objective is to arrive at functional relationships of physical measures expressed in absolute terms with a dependent variable which consists of a proportional concept. A given change in backfat thickness, for example, can be expected to have considerably more influence on the proportion of high value cuts on 120 pound carcasses than on 200 pound carcasses. And measuring this change in relationship is another part of the problem.

Sampling by weight alone encounters no particular obstacle. It does not, however, suffice for our purposes. It is also essential that the separate regression analyses be characterized by a homoscedastic pattern of individual observations. One method of at least partially achieving this objective is to classify the carcasses by degree of finish, by eye alone, into six different finish categories varying from the excessively overfat to the extremely underfinished. Within each weight group an attempt should be made to obtain a wide range and uniform distribution of degree of finish. This may prove to be a rather tedious assignment. To obtain adequate numbers of light weight overfinished carcasses might be quite difficult, particularly in certain seasons. To find the underfinished carcasses among the heavy weights may be virtually impossible, Nevertheless, within most of the individual weights it should be possible to obtain a fairly uniform scatter of observations about the several regression lines.

The numbers required for an adequate sample in making studies of this character depend largely upon the range in variation of finish within the weight groups. A two way classification with 10 weight groups along one axis, 6 categories of finish along the other, and the 60 resultant cells within, will provide the suggested sampling model. If each of the cells are equally well filled it would appear that 60 carcasses within each weight group would be sufficient for the regression analyses. Larger numbers will be required if this qualitative criterion is not satisfied.

The analytical procedures here proposed are frankly offered only as a suggested approach. The techniques of analysis discussed here are not new but rather have been included in the curricula of graduate students in agricultural economics for more than a generation and are a part of the equipment of most research workers. As further investigations are carried on in this field, a more highly sophisticated and erudite methodology surely will be developed.

THE FEDERALLY SPONSORED CREDIT SERVICES TO AMERICAN AGRICULTURE

Suggestions for Improvement and Coordination

A Report by a Research Committee

THE organization and policies of the various federally sponsored agencies which supply credit to agriculture have been under study during the past three years. Congressional groups and farm organizations have been giving these matters active consideration, and also several committees within the Farm Credit Administration, among them a committee of land bank presidents, one of General Agents, and one of administrators in the central office. Since the conclusions of these groups reflect a wide range of viewpoints, suggestion was made that an independent study be undertaken by a group of professional agricultural economists familiar with agricultural credit problems, but not connected with any credit agency. To facilitate such a study the Governor of the Farm Credit Administration, in the fall of 1944, invited five agricultural economists from various parts of the country to serve as an independent research committee to study possibilities for further improvement and strengthening of the system of federally sponsored credit services to American agriculture. This committee consisted of:

Murray R. Benedict, University of California, Chairman
George H. Aull, Clemson College
Karl Brandt, Stanford University
Glenn W. Hedlund, Cornell University
William G. Murray, Iowa State College

After a year of frequent meetings and intensive study, the committee completed a joint report representing susbtantial agreement on the analyses and recommendations presented. The five following papers are segments of a condensed version of this joint report severed merely for convenience in presentation, but indicating neither exclusive nor major authorship of the ideas contained in those parts, nor a division of labor in treating the subject. All five members of the committee have contributed to all parts of the report, and the five papers are the result of their joint effort. While the Farm Credit Administration has facilitated the committee's work, it is in no respect responsible for the conclusions and proposals presented. These are solely the responsibility of the members of the committee.

THE FEDERALLY SPONSORED CREDIT SERVICES TO AMERICAN AGRICULTURE—SUGGESTIONS FOR IMPROVEMENT AND COORDINATION

A.—CONDITIONS AND PROBLEMS THE SYSTEM SHOULD BE DESIGNED TO MEET[1]

I. *The present status of the federally sponsored credit agencies.*

Federally sponsored credit for American agriculture had its beginning in the Federal Farm Loan System of 1916, with 12 federal land banks under a Federal Farm Loan Board supplying long-term farm mortgage loans. These land banks were created to supply cheaper credit, improve the paying-off methods, and to make credit more equally available in different parts of the country.

Over the years, the original framework has been enlarged by additions to the cooperative credit system, by special appropriations to meet distress situations, and by establishing the Farm Security Administration (recently renamed the Farmers' Home Administration) for the purpose of providing more adequately for marginal borrowers not eligible for loans from the cooperative credit agencies.

The cooperative credit system became more comprehensive by the creation of the Intermediate Credit Banks (1923), the Banks for Cooperatives, the Production Credit Corporations and the Farm Credit Administration (1933).

The provision for loans out of direct appropriations began with the feed and seed loan program initiated by presidential order in 1918. It was greatly extended by later measures such as the act establishing the Agricultural Marketing Act Revolving Fund in 1929, the creation of the regional agricultural credit corporations in 1932, the provisions of aid through the Resettlement Administration after 1933, and the creation of the Farm Security Administration in 1937.

The federally sponsored agricultural credit system now has two main divisions:

(1). The *cooperative loan system*, chiefly centered in the Farm Credit Administration, consists of the 12 federal land banks and their network of national farm loan associations; the 12 interme-

[1] Presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947, by Karl Brandt.

diate credit banks; the 13 banks for cooperatives; and the 12 production credit corporations with their system of production credit associations. Closely associated with the land bank system is the federal Farm Mortgage Corporation with its program of commissioner loans. This, while not a cooperative loan program, is more closely related administratively and in policy to the cooperative loan system than to the direct loan system. The cooperative loan agencies were designed to be eventually farmer-owned, principally farmer-controlled, and in the main self-supporting.

(2). The *direct loan* provisions include the disaster loans, made by the Reconstruction Finance Corporation, and the crop and feed loans and regional Agricultural Credit Corporation loans, now in the Farm Credit Administration; and the rehabilitation loan program, tenant purchase loans, and various others administered by the Farmers' Home Administration. The direct loan program, particularly that part of it administered by the Farmers' Home Administration, is not merely an addition to the earlier system, but represents a new approach to farm credit and a different attitude toward the improvement of the earnings of low-income farmers.

Often federal credit aids to farmers are too numerous to mention. They include federal reclamation developments, loans for rural electrification, tenant purchase loans, water-facility loans, loans by the Commodity Credit Corporation for support of commodity prices or to change the time of marketing, and many others.

It is evident that a system which has grown up a piece at a time in this way would be different in structure and coordination from what it would have been had it been created all at one time as a single coordinated and comprehensive system. While minor adjustments in organization and procedure have been made frequently and a major reorganization was carried through in 1933, *the system as a whole has become unnecessarily complicated and expensive to administer. Coordination is inadequate between direct loan programs and the cooperative credit system.*

II.—*The need for greater strength and better organization.*

A review of the entire system of government-sponsored credit for agriculture with a view to increasing its effectiveness, economy, and convenience seems timely and appropriate for the following reasons:

1. The necessary adjustment in agriculture during the coming years calls for a high degree of flexibility in organization and policy.
2. During the early thirties the system passed through the worst depression American agriculture has known. That period. demonstrated the general soundness of the existing credit system for American agriculture, but it revealed weaknesses which should be corrected before another period of stress. Moreover, the experience of almost one generation in the cooperative part of the system should be utilized for improving the effectiveness of all agencies even for periods of more normal loan conditions.
3. We are now in the most serious inflation since the organized agricultural credit system became a going concern in the United States. Temporarily this presents problems of a type different from those arising in periods of depression, but this condition will inevitably lead to more difficult adjustments during the later price deflation.
4. Some of the agencies which originally were needed in getting the local units established and functioning may be dispensable now where a comprehensive network of local units has matured.
5. There is an increased interest in new types of loans designed to improve the economic and social condition of marginal farmers, and in many other types such as loans for veterans, loans to improve rural housing, and loans to aid forestry development. It is important that the probable effects of such loans upon the existing cooperative credit agencies, the borrowers, and the public be considered, and that they be brought into a logical and well-coordinated relationship to the other federally sponsored credit agencies and the private credit agencies serving agriculture.
6. Owing to the extraordinary liquidity of the investment capital market, and under the impact of a low interest rate policy of the Federal Government, the government-sponsored credit agencies are meeting increasingly severe competition. Costs must be reduced to the lowest level consistent with effective operation if they are to maintain a strong and sound position. It is essential that the federally sponsored farm credit agencies be maintained during periods of prosperity if they are to be

in a position to meet the needs of agriculture in times of adversity. This calls for realistic consideration of their relation to the private credit agencies, and a clarification of policy as to whether they are to be regarded as standby agencies to serve mainly in times of stress or are expected to maintain a substantial portion of the loan business in good times as well as bad.

7. There is a need to clarify specific functions and responsibilities. Many parts of the system have grown up as a result of emergencies. Comparatively little has been done toward shaking down these emergency provisions into a well-integrated permanent system designed to meet the wide variety of conditions resulting from alternating periods of prosperity and depression.

III.—*Kinds of situations the system should be designed to meet.*

The problem of supplying credit for agriculture through government-sponsored agencies has changed over the years, and is likely to be modified still further in the decade or two following this war. The credit structure should be planned with a view to making the largest possible contribution to the stability and well-being of agriculture. Specific situations which the system should be prepared to meet may be listed as follows:

During an initial period strong economic pressure for still higher land prices will be felt and cause political pressure for larger loans. Assuming a land-loan policy for the government-sponsored agencies which is directed toward stabilizing land prices and loan levels, this will mean for them a smaller proportion of the total volume of agricultural loans made and a shrinking volume of business.

During a later period farm incomes may be substantially lower than at present. Farmers will then have difficulty in meeting loan commitments, especially where loans have been made on high percentages of value or on high appraisals. During this period widespread demands for extensions of time on loans and for postponement of interest payments may be expected, as well as demands for the refinancing or writing down of loans to correspond to reduced abilities of borrowers to meet their obligations.

During the first period, but probably reaching into the second, intense pressures will operate toward expansion of given types of loans such as tenant purchase loans, rehabilitation loans, loans to veterans, and loans for refinancing. Many of these will involve financing that may not be regarded as sound in terms of normal standards of credit extension, but which may nevertheless need to be provided in the interest of broader social objectives.

Considerable effort will be made to use credit for stimulating changes such as improved rural housing, better equipped farms, consolidation of small units, creation of family-type farms, holding of stocks of farm commodities, and creating new cooperative associations.

There may be intermittent periods with widespread drought or other kinds of adverse weather causing regional distress and jeopardizing the credit standing of district and local credit agencies serving these areas.

The farm credit organization should be prepared to meet these varied conditions. It should have such well-considered policies with respect to difficult types of loans that the organization as a whole will remain strong and sound.

IV. *Implications of a possible general economic depression.*

The assumptions made thus far do not contemplate a large general economic depression like the one that hit the world in 1929–32 and the following years, but rather a period of agricultural adjustment accompanied by high employment in industry. Following the reconversion period a brisk reconstruction boom in industry and trade may develop and hold for several years. Such a prospect would lessen the threat of an unmanageable agricultural situation.

For the sake of safety, however, it should also be anticipated that such a boom may suddenly collapse and that after the boom a real general depression might strike at industry and commerce. This threat may become real if, instead of a depoisoned atmosphere in international relations, already existing new tensions between great powers should become more vicious, and for various reasons the volume of foreign trade should fall sharply.

If industrial employment should shrink substantially after a few years, agriculture will again be facing cataclysmic conditions which cannot be cured by agricultural credit policies or even by agricultural policies in general. Only constructive national and international policies can give promise of removing the causes of the worst afflictions.

Yet, with the aid of well coordinated economic policies, the farm credit structure must be adapted to cope with whatever emergencies may arise, and must be able to weather the storm in the service of American agriculture.

In a real depression the farm-credit structure is the most exposed part of the entire agricultural system, because it is based in large part upon farm mortgages which, by definition and law, represent a rigid structure of long-term obligations. When the income on land

falls and consequently land values begin to decline, the whole edifice of debts eventually begins to crack. The falling income prevents certain debtors from paying interest when due, and declining land values shrink the farmers' equities in their land, often to the point where the first mortgage exceeds the value.

This cracking, and the losses it involves, is a process of "adjustment" but an unnecessarily costly one if left only to the automatism of laws of bankruptcy and execution against debtors. The psychological effects of such a crisis, with wholesale use of bankruptcy procedures, are destructive.

The agricultural credit system should be capable of cushioning the shock of such drastic changes in land values and incomes rather than be an aggravating element. In the recommended plan for reorganization of the agricultural credit system that folllows, special consideration has been given to this requirement.

V. *Policy problems.*

a. *General policy relating to the system as a whole.* There is need for clearer definition of the basic purposes of a combined and comprehensive credit system such as that proposed in this report. Such clarification of objectives can do much toward avoiding controversy and confusion and, in cases of fundamental differences of viewpoint, can bring them out clearly for legislative decision. In order to clarify the point of view underlying the succeeding sections, the following brief discussion of general principles is presented.

What is a federally sponsored agricultural credit system expected to accomplish? Should it confine its activity strictly to providing credit to all farmers who, under the rules of banking, are good risks, and thus, so to speak, service agriculture with outside capital as a neutral agent without interfering or taking sides in the competition among different producers? This would be the liberal concept of a free competitive economy. Its clear adoption would mean that loans would be made exclusively on objective economic considerations.

Or, is such a system designed to serve secondarily also for bringing about certain social or economic reforms, such as the reduction of farm tenancy, the promotion of family-sized farms, or the giving of aid to "underprivileged" people?

Naturally, a pure service policy of supplying credit on sound business principles as a disinterested party would have some joint social, political, and economic effects. Yet it is obvious that a non-

intervention and strict business course would be much less exposed to political controversy and much freer in pursuing a highly efficient and clean business performance without bias.

Both of the philosophies mentioned must be considered, however, in any discussion of a proposal to combine under one roof and under one common supervision all federally sponsored credit organizations dealing with agriculture. If the agricultural credit system is to operate wholly according to sound business principles, it cannot, of course, become an instrument for social reforms. On the other hand there is no valid reason why an over-all agricultural credit agency should not combine the functions of channeling funds from investors to farmers who are good risks with such other lending activities as the Congress may from time to time direct. It is important, however, that definite aims and policies be developed respecting each of these functions and that the agencies of a administration be clearly separate within the framework of the unified agricultural credit system.

It has been the established policy of the Congress for two decades or more to provide both a "passive" credit service and an active implementation of certain agricultural policies which give aid to economically weaker farmers and mitigate the severity of the competitive struggle. There appears to be social and economic justification for both types of loans. It is necessary however, that plans with respect to them be related to certain guiding principles if decisions on structural and functional problems are to be consistent and constructive. The following are suggested as being of particular importance:

1. The basic aim of the publicly sponsored agricultural credit system, both in its cooperative and direct loan divisions and through its other service activities, should be to foster stability of tenure, pride in ownership, soil conservation, and constructive farming; to raise the standards of rural living through low-cost credit on terms convenient and suitable to the borrower wherever there is reasonable prospect that it will be used constructively, and can be repaid.

2. For each branch of the system the intent and purpose of the Congress should clearly be set forth in the Act establishing it.

3. The credit institutions, whether cooperative or public, should not be considered as ends in themselves, but should exist purely for the purpose of rendering service to agriculture within the framework of national policy. This principle would preclude the creation or maintenance of such agencies where the same or a better service is satisfactorily rendered by private agencies.

4. The credit organization should operate according to good business principles and should reduce costs to that minimum which is consistent with maintenance of the service desired. Whatever the type of loan, there should be provision for prompt check-up on delinquencies, regular and adequate audits, and appropriate supervision. The reports of the agency should provide a clear and informative record of their loaning activities and the results of them.

5. Direct government credit should be provided only where reasonable service cannot be provided by the cooperative system or by private agencies. Where government credit is provided, it should be for clearly defined purposes and under a clearly formulated policy established by the Congress.

6. The direct loan programs should be so planned as to encourage graduation into the regular cooperative or private loan systems as soon as the borrower can qualify.

7. The various types of direct loans should be combined in such a way that the prospective borrower can gain access to funds he is entitled to with a minimum of shopping around, and in a way that will avoid unnecessary duplication of staff and possibilities of undesirable competition between agencies.

8. Both the appraisal policy and the percentage of value loaned should be established with a view to furthering the long-term welfare of the individual borrower and of American agriculture. To this end bases of appraisal should not follow closely either booms or depressions in agriculture, but should be related to the expected long-term earning ability of the land. Loans of very high percentages of value should be made only in situations where they are not likely to lead to loss of the farm in a period of adversity or to a long period of low living standards for the farm family in its efforts to carry an excessive load of debt. Where the equity is too small to permit of safe purchase, the aim should be to provide working capital for effective operation as a tenant, and efforts looking to increased stability of tenure should be in the direction of improving leasing arrangements.

9. Since it is created for service to the public, the agricultural credit organization should not assume the attitude of a ruthless business corporation which exploits its position to the fullest, disregarding the harm done to customers or the general public. It should be bound to act upon sound business principles, but also to behave as a trustee for its clients and thus try to avoid losses and hardships for them in so far as the safety and health of the business as such permit.

10. The loan procedures and policies should be so designed as to permit and facilitate cooperation by farmers in the more general agricultural programs of the government, but should not be conditioned on such participation nor used to coerce growers into such participation.

11. It should be made clear that the Government will not come to the rescue of creditors who have ignored public warnings against excessive commitments by lenders and borrowers, and have by their reckless lending caused or contributed to the insolvency of their clients.

b. *The place of cooperative loans.* The cooperative loan system,

which has long been the main framework of the government-sponsored farm credit organization, was designed to meet specific problems, and to operate on a regular banking basis, but with co-operative ownership instead of the more customary forms of private ownership. Its purposes are as follows:

1. To bring together the small and diverse collateral resources of individual farms so that the combined resources will constitute a suitable basis for negotiable securities salable in a wider money market, thus permitting the tapping of credit resources not available to the individual farmer.
2. To provide loans on terms suited to the probable timing of repayments.
3. To create an efficient, orderly channel between creditor and debtor so that the individual creditor does not need to seek out the individual borrower, or vice versa.
4. To keep for farmer borrowers such profits as may arise over and above the necessary expenses of providing credit.
5. To establish a credit system owned in the main by the borrowers and oriented to their interests rather than to those of the creditor.

In accordance with these purposes, the cooperative credit system is designed for handling loans of a "sound" and relatively conservative type. Under the laws governing the system, its loans have been kept on a relatively conservative percentage of the value of the security. This has contributed not only to safety, but to the confidence of security buyers, which is necessary if money is to be secured at low rates of interest. Loan percentages have been kept low for the same reason. The cooperative form of organization has been used so that the borrowers may not only avoid unduly high costs for credit, but also that they may have enough voice in the management of the system to protect their interests as borrowers with constructive action.

c. *Principles and policies for cooperative credit.*

1. The principal part of the agricultural credit system should be cooperative in structure and, in the main, self-supporting. Decentralization of responsibility, and borrower participation, should be provided to the fullest extent compatible with the well-being of the system and with adequate protection of the

government-owned funds in it. It should provide loans as efficiently as possible and on as liberal terms as can be given with due regard to the safety of the system, and should operate at as low a cost as is consistent with good service. It should not be expected to make loans on which the risks are high or types of loans that may cause misgiving to purchasers of its securities. This is not to say that there should be no loans of such types, but if made, such loans should be provided by other agencies from funds obtained in a different way.

2. The cooperative loan systems should nevertheless exercise leadership in the credit field. It should seek to improve the quality of appraisals generally and to provide new and better services of various kinds.
3. It should provide keen but fair competition to the private credit agencies, but should not aim to monopolize the field. Both the government-sponsored and private agencies are likely to be more efficient if subjected to the stimulus of competition with each other. The government-sponsored agencies should, however, recognize that they have a responsibility for stabilizing credit conditions in emergencies. To the extent that this involves additional risks or operating costs not incurred by the private agencies, the Government should be prepared to provide special aid. In keeping with this view the government-sponsored agencies should serve as a balancing factor between periods of prosperity and depressions, and should seek to counteract actions by the private agencies that are adverse to the public interest.
4. Interest rates should be based upon the cost of funds in the money market plus a margin adequate to maintain the lending agencies when operating on an efficient basis. Where it is the wish of the Congress that loans be made to high-risk borrowers, such subsidies as are provided should be either in the form of grants-in-aid or meeting losses on delinquent loans, rather than in the form of an uneconomically low interest rate. To provide funds at a total cost which is below a true competitive rate of interest is likely to be destructive both to the cooperative and private credit systems, and will lead to an increasing drain on the public treasury. Basically, the aim should be to provide agriculture with access to the money markets on a basis equal to that of other types of business,

but with recognition of the special conditions of agriculture.[2]

5. Since the Congress has indicated its preference for a uniform basic interest rate over the nation, the spreads allowed the various agencies should be made wide enough so that the agencies in the higher-risk areas can maintain their solvency while those in lower-risk areas can reflect their lower costs in larger patronage dividends. To require an unduly low rate for a high-risk area or type of loan merely operates to bar the borrower from the given source of funds and is likely to force him to use very high-cost private funds, since it eliminates the modifying competitive influence of the government-sponsored agency, thus defeating the very purpose for which it was established.
6. More adequate provision should be made for sharing losses between the local, district, and national agencies with a view to spreading uncontrollable risks more widely, assuring continued solvency and effectiveness of the various units, and relating losses to responsibilities undertaken in making loans.
7. The cooperative loan system should provide the public with a safe and efficient mechanism for investing loan funds in agriculture.
8. Government guarantees should be used as sparingly as possible since these are likely to lead to less careful administration of the system, and may involve the federal treasury in large and unpredictable losses. The disastrous experiences of some of the state loan systems give evidence of these dangers.
9. The policy recently adopted whereby the terms of repayment are made more flexible and larger payments are permitted in good years and smaller ones in bad years should be strengthened, since it makes the system more depression-proof and provides a safeguard to the borrower in case he runs into years when regular payments cannot be made. The credit agencies might well be given authority to offer inducements for larger payments in good times, possibly in the form of a slightly reduced interest rate over the period in which the borrower is ahead of his repayment schedule.

d. *The place of direct loans.* Direct federal loans are distinguished

[2] The relation of governmental to private lending is discussed more fully in an article "The Relation of Public to Private Lending Agencies (in Agriculture) and Recent Trends in Their Development," by M. R. Benedict, this JOURNAL, February 1945, pp. 88–103.

from cooperative loans by the fact that the funds are provided either through direct appropriations or from securities backed by the Government's credit rather than by borrower's collateral. On these loans the Government assumes full responsibility for granting the loans, collecting the payments, and underwriting the losses. The object of direct lending is to make credit available to those who cannot qualify through the usual channels and whose status can presumably be improved by means of credit. Direct loans thus are designed to serve a constructive social purpose. The practice of making direct government loans for agricultural purposes began about twenty-five years ago and apparently has become firmly established as a part of the system of finance.

To administer its policy of supplementing private and cooperative credit with direct government funds, the Congress has seen fit to create a number of different agencies and to specify various policies. In general, a new organization has been set up in response to each new demand for direct government lending. Seldom is one of these organizations discontinued when a new one is set up. At the present time, the Federal Government is making direct loans to farmers through at least seven separate agencies including the Farmers' Home Administration, the Regional Agricultural Credit Corporation, the Rural Electrification Administration, the Federal Farm Mortgage Corporation, the Commodity Credit Corporation, the Disaster Loan Corporation, and the Emergency Crop and Feed Loan Division of the Farm Credit Administration. While there is a certain amount of specialization in the type of loan made by each of these agencies, and some of them have been coordinated under the supervision of a single agency, there is obvious need for more unification of direct lending activities.

It is important to remember that while direct and cooperative loans are made under different circumstances, their effects on the general economy are quite similar. Direct loans, however, since they involve the use of money from the public treasury, raise questions such as that of using government money to increase the number of farmers when there is a surplus of agricultural production; of subsidizing inefficient producers; of encouraging widespread distribution of government credit even when private lenders are looking for outlets for their funds; of charging less for a high-risk (government) loan than must be charged for a private or cooperative loan; of lending 100 percent on inflated land values; of duplication

of lending agencies. All of these suggest the need for a clear understanding of the principles which govern the administration of direct government loans, and a good balance between direct loans and those made by cooperative and private lending agencies.

e. *Principles and policies for direct loans.* If the system is to function effectively in conjunction with the private credit facilities available to agriculture, certain principles of direct lending should be agreed upon and policies established which will make them effective. The following are suggested as appropriate guiding principles in the provision of loans of this type:

1. Direct loans should be oriented primarily to improving the operation of existing farms and to aiding capable farmers who may need financing but are not eligible for private loans or loans through the cooperative system. The aim should be to get the direct loaning activities into an appropriate relationship to the cooperative and private sources of credit and established as a permanent system rather than a series of stopgap arrangements set up to meet specific emergencies.

Many small farms are underfinanced and poorly managed. Some of these can be improved markedly by the provision of credit for specific purposes, coupled with the regular educational activities of the extension service. For a good many, however, the purpose of the loan will not be accomplished unless the loan is accompanied by rather direct and positive supervision, used largely as a means of educating the farmer-borrowers.

The basic policy should be to seek to get these farmers on their feet and sufficiently developed so that they can finance through the regular agencies and will look to the regular educational services for help on their problems. This means in part that there should be positive encouragement for them to take more part in the regular community activities. They should be got out of the special aid class as soon as possible, not only for the purpose of minimizing governmental expenditures, but also for the purpose of improving their own self-respect and self-confidence.

The program with respect to a given farmer should be undertaken only if there is reasonable prospect of success in making him an independent, self-respecting farmer who will not need special aid; only if he has expressed a real willingness to undertake an appropriate program, and only if he shows a real interest in raising his level of living through increased production for home use. It is recognized that loans of this kind require more supervision than loans made on a regular banking basis, and are expensive to administer, partly because they are in most cases smaller than the others. The necessary provision of supervision and education may well be made as a subsidy from the Government. The loans themselves, however, should be made in the expectation that they will be repaid

and at rates of interest that will not be ruinously competitive with the cooperative or private agencies.

2. When a direct loan is made as a supplement to the cooperative or private loan, encouragement should be given for the borrower to repay the direct loan as soon as possible and to get onto a more normal borrowing basis, provided, of course, that in the meantime the security back of the other loans is not allowed to deteriorate.
3. Whenever a direct loan or a part of it can be refinanced at reasonable rates by funds obtainable from other sources this should be done.
4. The interest rate on a direct loan should be somewhat higher than that on a cooperative loan, perhaps one percent higher. Ordinarily direct loans are made in small amounts, more risk is involved, and they cost more to make. The difference of one per cent in the rate would add very little to the expenses of the borrower, but would be sufficient to encourage the shift to cooperative or private credit as soon as the borrower is eligible.
5. There should be definite criteria or formulae which can be applied to determine eligibility of applicants for direct loans. A sufficient number of indices are now available to make possible fairly simple and readily understood "yardsticks," the use of which would eliminate much criticism and abuse in the administration of government loans. A record of borrower progress and credit history should be kept.[3]
6. There should be some reasonable flexible limit upon the number of times a borrower will be eligible for a direct loan.

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[3] For rehabilitation loans it is suggested that eligibility requirements include five years of experience as an operating farmer, inability to get loans elsewhere, and approval by the local advisory committee. The principal function of these loans should be that implied by the name—that is, to reestablish farmers of proven ability, who, because of some circumstances beyond their control, have lost out.

There should be another type of loan similar in nature but directed to a different group of farmers. This would be for aiding new farmers in getting established. Here the usual requirement might be that the applicant be under forty years of age, have had five years of farm experience, and have the approval of the local advisory committee. However, such an age qualification should not be unduly rigid. Exceptional situations may warrant giving such aid to some farm workers who are older.

The main purpose of these loans would be to enable promising young farmers to get started as enterpreneurs at an earlier time than otherwise could be done. In many areas young farmers of this type are able to get financing from landowners who are interested in taking them on as partners or otherwise. There are, however, considerable areas where this may not be possible.

Rehabilitation loans, for example, should "rehabilitate" and emergency loans should relieve the emergency, but there can be little justification for disguising perpetual relief by calling it a loan. It must be expected that loans of this kind will show some losses. These, however, should be more than offset by the interest earned, and the funds should not only be maintained, but probably should make some return to the government. There should be more definite provision for closing up and getting off the books loans that have definitely gone bad.

7. Care should be exercised to avoid use of government credit either, to establish or maintain farmers on uneconomic units or in areas that are submarginal for the type of farming the borrower expects to carry on, or under circumstances which offer no prospect for economic progress.
8. Government funds for direct lending should be allocated annually by the Congress on the basis of experience and prospective demand in a way similar to that used in providing emergency crop and feed loans. Separate allocations should be made for purely loan purposes and for the necessary supervision. The welfare aspects of direct lending including all kinds of grants, special services, etc., should be separately reported, and not charged as a part of the cost of credit.
9. Grants-in-aid, if made, should be separate from the loan, and probably through a different agency. They should not be used in such a way as to make unclear what is happening in the loan program.
10. Government funds should be made available for direct lending to cooperative associations for facility purposes when in the opinion of the District Board the facilities seem to be in the public interest, and when private or cooperative sources are reluctant to advance the necessary funds. As in the case of other direct government loans, the financial arrangements should be transferred to a cooperative or private lending agency as soon as conditions warrant.
11. Government loans amounting to substantially 100 per cent of the cost of a farm do not constitute a sound method of promoting farm ownership even under normal conditions. With land values at inflated levels, the probability of difficulty is especially great. As a general policy it is believed that

a desirable pattern of land tenure can best be promoted under conditions which require a prospective borrower to provide cash equivalent for at least 15 percent equity in the normal value of the farm he wishes to buy before being eligible for a government loan.[4] Until this is done, it seems likely that he would be better off as a tenant. Government loans should not be used to set people up in farming who lack the requisite experience, and who are unable to provide some part of the purchase price.[5]

12. Direct loans are justifiable in cases of physical disaster and to prevent economic collapse. The amounts advanced, however, should be in addition to credit obtainable from other sources under reasonable terms, and should carry a somewhat higher rate of interest.
13. In general, direct loans should be provided only on approval of a local committee which includes well-informed farmers of high standing in the community.
14. Areas in which disaster or drouth loans are found necessary at frequent intervals should be brought under study for more basic measures of correction. The mere extension of credit is not a solution for problems of this kind.
15. Direct loans of the production type should come under closer supervision than ordinary private or cooperative loans. This will not only increase the likelihood of rehabilitating the farmer but will strengthen his desire to get into a more normal credit status at the earliest practical time.
16. "Commissioner-type" loans should be looked upon primarily as a means of refinancing in periods like the 1930's when the value of the security has fallen below what it was at the time the original mortgage was given. Loans of this kind should continue to be limited to reasonable percentages of normal

[4] Dissenting opinion by W. G. Murray: "The policy of making tenant-purchase loans up to 100 per cent of the normal value of the property should be permitted provided the borrowers have free of debt the necessary livestock, equipment, and operating capital to operate the farm purchased. In addition, such 100 per cent loans should be permitted only if these loans are restricted as in the past to a select group of the more capable tenants. It is assumed that tenant-purchase borrowers would operate under close supervision from the lending agency."

[5] It is suggested that tenant-purchase loans be limited to farmers under 40 who have had five years' successful experience as tenants and are approved by the local advisory committee. This program presumably would apply to tenant farmers of better than average ability and usually in the most active period of life. While 85 percent of normal value is suggested as an upper limit, a larger equity is desirable.

value in order that they not be a means of bailing out creditors who have engaged in reckless financing despite repeated warnings of the dangers involved. There is a place, however, for this type of loan in new purchases, but borrowers should be carefully selected. Otherwise they may merely be involved in an operation that will eventually mean the wiping out of their equities. Funds of this type should also be used in making first mortgage loans where the property is not eligible for a loan from the cooperative loan system because the operator is a part-time farmer or there is some other condition which prevents his getting a regular land bank loan.

It seems evident that the whole direct loan program could be simplified and reduced to a smaller number of agencies. The rehabilitation loan procedure should eventually take care of most of the needs for special types of production loans. The crop and feed loans, disaster loans, rehabilitation loans, and others of similar character might be combined for handling through one agency with a single field staff by transfer of the assets and liabilities of these agencies to the new one. The aim should be to meet quickly and adequately given types of need, and there should not be any pressure to put out specified amounts of money in each area. The procedure would be to establish well recognized criteria as to the conditions under which such loans would be available, and to develop a permanent and adequate mechanism that could meet all legitimate needs.

For example, with respect to disaster loans, it might be stated that when drought, floods, frost, wind, or insect damage reduces the average yield of main crops of any county or other unit to some specified fraction, say fifty per cent of the ten-year average, farmers in that unit would automatically become eligible for such loans. Thus, help could be provided quickly and automatically instead of by special Congressional action in each case.[6]

f. *The spreading of risks.*[7]—Creditors have to cope with two main

[6] There is need for some analysis of the conditions which have in the past led to providing loans of this kind, and whatever conclusion is reached should be written into the law. It may be a drop to fifty percent of usual yield or to some other percentage. The Governor should, however, be given some discretion in designating the classes of loans and boundaries of eligible areas or classes of farmers to be served.

[7] The subject of risks and risk bearing is an exceedingly broad one and full exploration of it in relation to credit operations will require extensive studies probably better suited for the research division of the Farm Credit Administration than for this committee. Facts may be brought out in such studies that may call for changes in the general and rough analysis presented here.

types of risk: (a) those resulting from incompetence, dishonesty, or other personal circumstances of the borrower, and (b) those due to causes beyond the borrower's control. The general thought underlying the Federal Land Bank system took account principally of the risks arising from personal factors rather than of those caused by adverse economic situations. The method of risk underwriting by the local national farm loan associations with the device of capital stock and double indemnity proved ill suited to bear the risk of a depression and severe recession of land values. Any accumulation of losses not only exhausted the associations' reserves, but ran them into heavy debt and made them defunct for further lending. With the real risk lying on the district banks, the real responsibility for making loans shifted to them.

The committee suggests, therefore, that control of the local associations and of the district banks be vested in memberships of nominal cost, and that the risk of losses be covered by adequate insurance funds at the local, district, and national level, and not by capital reserves. It is assumed that a one-half of one percent insurance charge would more than carry the losses for the land bank system as a whole. It is suggested that an insurance charge of one-half of one percent be collected on each loan, that these premium revenues be assigned in three equal parts to the local, district, and national insurance funds, and that losses, when officially determined, be charged equally against these three funds. Associations or districts with higher risks would pay a higher net rate because they would have less to rebate to their members than areas with low risks.

Once this plan is in full operation after an interim period in which the insurance fund is brought to an adequate level, the net cost to the borrower would be only slightly higher. The suggested plan would leave intact the basic concept of a uniform interest rate, but would relate net costs of credit more realistically to differences in the real cost of providing credit.

However, the shift from the present system of absorbing risk through capital stock reserves plus a risk margin within the interest rate to a plain insurance fund operation would require considerable further study for full evaluation, and particularly for specific recommendations.

SUGGESTIONS FOR STRENGTHENING THE FEDERAL FARM CREDIT SYSTEM

B. THE COOPERATIVE AND MIXED OWNERSHIP SEGMENT[8]

Since 1916 the credit facilities now grouped in the Farm Credit Administration have grown from a modest start of twelve regional land banks, with a capitalization of nine million dollars, to a comprehensive system of more than fifty corporations with assets in excess of two billion dollars.

This huge network of credit agencies did not, of course, come about through gradual implementation of a preconceived over-all plan. Additions were made as new needs arose and as farmers and the Congress became convinced that new agencies were needed. Some lending facilities, such as those for feed and seed loans and regional agricultural credit corporation loans, were provided to meet specific emergencies. Others, like the intermediate credit banks and the banks for cooperatives, were designed as permanent agencies to serve agriculture in normal times as well as in emergencies. Still others, like the production credit corporations, were established to facilitate transition to a situation in which, presumably, the parent corporation would not be needed.

The system now has back of it more than thirty years of experience. It has demonstrated its worth to the farmers of the United States, and has shown that it can be an important factor in stabilizing a large segment of the national economy in times of severe depression. The wisely conceived and far-reaching reorganization made in 1933 was largely responsible for introducing the flexibility and scale of operation necessary for it to perform this service.

It is evident, however, that any complex system of this kind, whether public or private, should be reviewed from time to time with a view to simplifying structure, eliminating obsolete features, and increasing efficiency. Conditions change, and likewise the methods and policies of competitors. Government agencies must also be modified and adjusted if they are to meet fully their obligations to the public.

The plan of organization suggested in the following pages grew out of about a year of study and consultation. In approaching this problem, it was the unanimous view of the authors of this report

[8] Presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947, by Murray R. Benedict.

that, so far as practical, chief reliance should be placed upon private initiative and cooperative action in performing functions of this kind, with the government facilitating and guiding such activity and taking more specific action only where that seems to be essential for carrying out policies determined upon by the Congress.

For clarity it is necessary to present a single consistent plan of organization. It should be emphasized, however, that the authors do not take the view that there is only one right way to organize the system. Large elements of judgment are involved, and personal philosophies inevitably affect conclusions. No doubt this plan can be improved. Perhaps a better one will be devised. Whatever changes may be brought about will, of course, be the result of compromises as among many different opinions. Also, it should be clear that if this or a similar plan is adopted it cannot be put into effect all at one time, and should not be so rigidly prescribed as to preclude gradual evolution. New developments such, for example, as the proposed research and service organization should be undertaken gradually and on a modest scale with a view to enlarging and adjusting them as experience is gained. A single chart and organization plan cannot show transition stages nor take account of modifications that may appear desirable as experience is gained. Hence it must inevitably appear more drastic and revolutionary than the reorganization process to which it relates. If the proposals here presented prove helpful in the numerous studies and discussions of this problem that are going on, in farm groups, in administrative agencies, and in the Congress, they will have served their main purpose.

The authors have undertaken to look at the problem broadly in terms of the over-all interests of farmers and of the public generally. Existing organization has been used as the framework, and changes are not suggested merely for the sake of change. On the other hand, there has been no effort to suggest retention of a given agency or function merely because it now exists. Most of the changes proposed are to overcome weaknesses which seemed apparent or to provide mechanisms that in the opinion of the committee could provide the same services in a more efficient and economical way. In some cases additional services have been suggested that go beyond those now provided.

In broad terms, the organizational changes proposed are as follows:

1. Bring the lending functions of the existing loan agencies into a single comprehensive agricultural credit system designed to provide adequate credit for the nation's agriculture in a coordinated and efficient way while maintaining needed segregation of the cooperative and direct loan systems.

2. Provide for a Governor of the combined agency and an advisory board of six members appointed by the President, with the advice and consent of the Senate, plus certain ex-officio members whose duties would be to aid in coordinating the work of the agricultural credit agency with related activities in the Department of Agriculture, the Treasury, and the Federal Reserve Board.

3. Transfer to the appropriate divisions the functions now performed by the Governor of the Farm Credit Administration, the Administrator of the Farmers' Home Administration, and the four "Commissioners." Provide for a top executive staff consisting, in addition to the Governor, of two Deputy Governors and two Directors. The two Deputy Governors, under general supervision of the Governor, would have charge respectively of the Cooperative Loan System and the Direct Loan System. One Director would be responsible for the Division of Finance and Discounts and the other for the Research and Service Division.

4. Consolidate the twelve intermediate credit banks into a single Agricultural Discount Bank with a branch or agent in each district.

5. Transfer the functions of the twelve production credit corporations to the proposed district agricultural banks and the district banks for cooperatives.

6. Provide for more borrower participation in the selection of district boards and more responsibility on the part of local boards.

7. Provide for better distribution of risks as between the local, regional, and national units of the Cooperative Loan System.

8. Eliminate the position of General Agent as a separate position in each district and accomplish coordination by means of a district coordinating committee, the chairman of which would be the president of one or the other of the two district banks proposed. The chairman would be appointed by the Governor on recommendation of the district board, and would have delegated to him such authority for coordination of the various units as the Governor may assign to him. Other members of the coordinating committee would be the appropriate district officers in the cooperative and direct loan units.

9. Transfer the functions of the Central Bank for Cooperatives to the proposed Agricultural Discount Bank and Federal Farm Loan Corporation.[9]

10. Transfer the ownership and control of the banks for cooperatives as rapidly as practical to the borrowing cooperative associations.

11. Strengthen the financial position and capital arrangements of the local and district units.

[9] Some members of the committee expressed the view that the transfer of authorization for making facility loans to cooperative associations should be to the Federal Farm Mortgage Corporation rather than to the Federal Farm Loan Corporation. This is discussed more fully in a later section.

12. Coordinate all research, appraisal, and educational activities under the general supervision of a Director of Research and Service.

13. Transfer the appraisal service to this consolidated Research and Service Division as a self-supporting unit, which would conduct appraisals for a fee for any of the credit agencies and for the general public as well.

14. Bring into the system the lending activities of a number of other government agencies making agricultural loans of various kinds.

15. At the local level, combine wherever practical the NFLA's and the PCA's under a single board with a single secretariat with such adjustments as may be needed in territory covered.

16. Consolidate in a single office at the local level most types of direct loans and provide for coordination of these loaning activities with those of the cooperative units, both at the local and district levels.

17. Provide for more adequate local counsel in making direct loans.

Figure 1 shows in graphic form the organization of the federally sponsored farm credit agencies approximately as it now exists. Figure 2 presents in graphic form the proposed plan of organization which is briefly outlined above.

When such a comprehensive and coordinated agricultural credit agency as that proposed has been established, all new acts providing funds or mechanisms for making agricultural loans should be integrated with it and should be consistent with the general policies and framework adopted. If that policy is not followed, there is strong likelihood that the problem of overlapping agencies and funds and of inconsistent policies will again arise in the course of a few years. The combined agency set up should be sufficiently broad in concept and design that any desired type of agricultural credit can be fitted into it.

Organization at the National Level

At the national level the proposals contemplate a single, coordinated system for supplying government credit based on direct Congressional appropriations and governmentally sponsored credit obtained through cooperative agencies established and supervised by the Government. To this end it is recommended that the loaning activities now in the Farm Credit Administration, the Farmers' Home Administration, and in some other agencies of the Government (later discussed separately) be brought together under a single administrative head and policy-shaping advisory board. While the various kinds of loans would thus be coordinated and brought into harmony with a broad over-all national policy on agricultural

PRESENT ORGANIZATION
AGENCIES SUPPLYING CREDIT TO AGRICULTURE

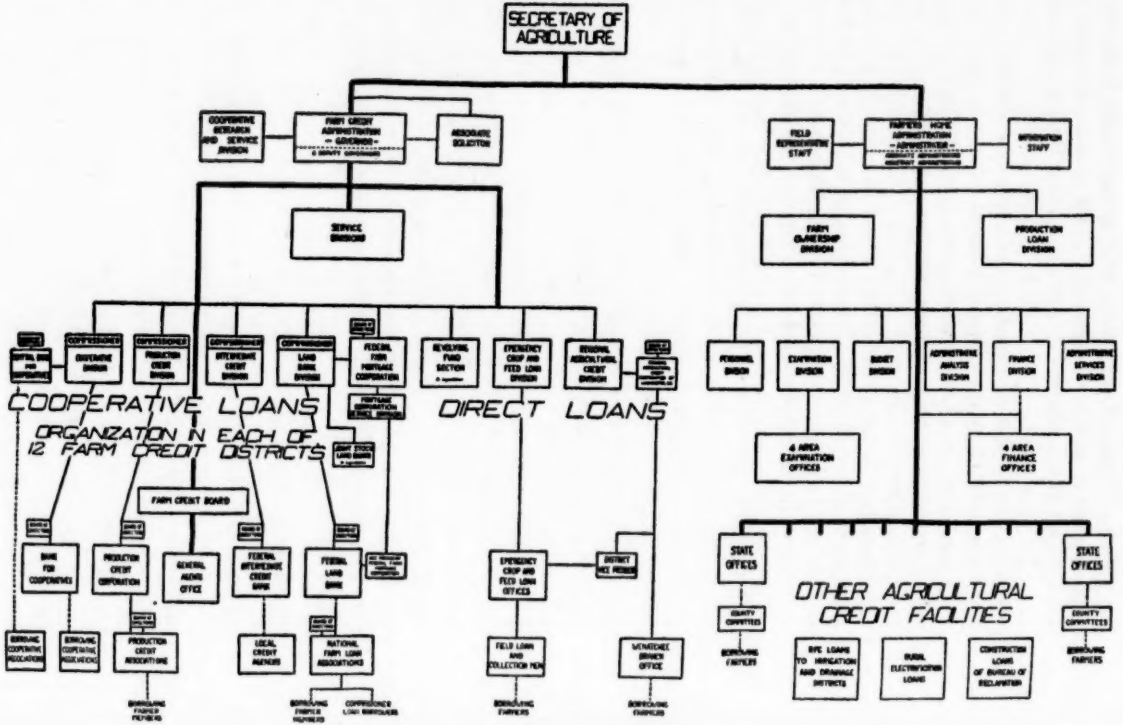

Fig. 1

Fig. 1

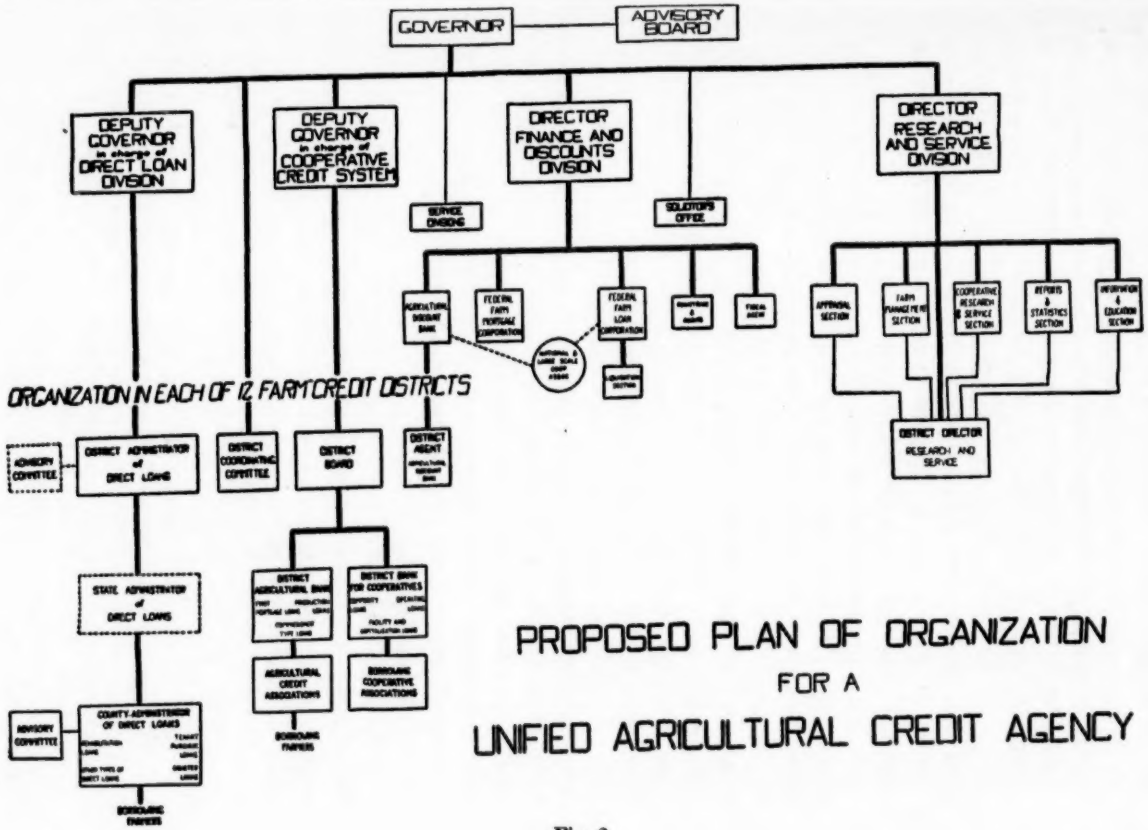
GOVERNOR
ADVISORY BOARD
DEPUTY GOVERNOR in charge of DIRECT LOAN DIVISION
DEPUTY GOVERNOR in charge of COOPERATIVE CREDIT SYSTEM
SERVICE DIVISIONS
DIRECTOR FINANCE AND DISCOUNTS DIVISION
SOLICITOR'S OFFICE
DIRECTOR RESEARCH AND SERVICE DIVISION
ORGANIZATION IN EACH OF 12 FARM CREDIT DISTRICTS
ADVISORY COMMITTEE
DISTRICT ADMINISTRATOR of DIRECT LOANS
DISTRICT COORDINATING COMMITTEE
DISTRICT BOARD
DISTRICT AGENT
STATE ADMINISTRATOR of DIRECT LOANS
DISTRICT AGRICULTURAL BANK
DISTRICT BANK FOR COOPERATIVES
AGRICULTURAL CREDIT ASSOCIATIONS
BORROWING COOPERATIVE ASSOCIATIONS
COUNTY ADMINISTRATOR OF DIRECT LOANS
BORROWING FARMERS
DISTRICT DIRECTOR RESEARCH AND SERVICE
PROPOSED PLAN OF ORGANIZATION
FOR A
UNIFIED AGRICULTURAL CREDIT AGENCY

Fig. 2

credit, the "direct loan" system and the "cooperative loan" system should be maintained as separate operating divisions at the national, district, and local levels. The reasons for this will become clearer as the proposed plan of organization is discussed. The two systems obtain their funds in different ways, require different forms of organization, and have different relationships to the Government and to the borrowers. Each should develop the kind of specialization and organization best suited to its functions but in harmony with the other system, and in keeping with well-considered plans for adequate over-all credit service to agriculture.

It is not proposed that all activities that have been handled by the Farmers' Home Administration and the Farm Security Administration be included in the work of the proposed farm credit agency. Those which the Congress chooses to authorize would, however, be continued in other agencies. Some of them will probably eventually come under more comprehensive arrangements for serving agriculture generally. For example, the health services provided through the Farm Security Administration may become part of a more general rural health service; the housing, provided in a very limited way, may become part of a more general program for the improvement of rural housing. The farm labor activities have already been shifted to other agencies. The educational and advisory activities now provided would be made available through the Research and Service Division which is described in a succeeding section of the committee's proposals.

Such an integration of existing agencies would have a number of important advantages. Among them are the following:

1. It would be possible to do away with unnecessary duplication of field staff in the handling of loans to farmers. Several agencies have heretofore had large field staffs handling direct loans such as crop and feed loans, rehabilitation loans, tenant-purchase loans, and so on. Expense could be cut down, and better administration could be provided if there were a single agency handling each principal type of loan in each locality. Staff could be more readily expanded to meet special needs, and contraction of staff would be more feasible when the volume of business is small in any given locality. In addition, there could be more joint use of service facilities by the cooperative and direct loan systems, as for example, in appraisals, accounting, research, etc.
2. Competitive lending between governmentally sponsored agencies could be reduced or eliminated. The marginal borrower needing special consideration could be given special aid as long as needed, but the loans could be better designed to build up the ability and equity

of the borrower so that he may become eligible for participation in the regular cooperative credit system where direct government loans would not be needed.

3. Such an arrangement would make possible better service to borrowers and would facilitate better coordination at the local level. As it is now, the prospective borrower must consult a variety of agencies in order to gain full knowledge of the loan facilities available to him.
4. It would make possible a more adequate and comprehensive offering of credit under uniform policies than now exists.

The Governor and the Advisory Board

The executive officer of the system would be a Governor, appointed by the President with the advice and consent of the Senate. In addition, it is proposed that there be an advisory board of six members appointed by the President for staggered terms of six years each. No two of these should be from any one district. They should be chosen on the basis of broad knowledge of agriculture and familiarity with agricultural credit problems. The board should be selected with a view to providing a wide range of experience, and good balance as between the interests of borrowers from the "cooperative" and the "direct-loan" divisions of the agency.[10]

The board would be a policy-advising board rather than an executive body. It would be nonpartisan and would have its own chairman, elected by its members. The Governor would be an ex-officio member, and provision would be made also for the Secretary of Agriculture, the Secretary of the Treasury, and the Chairman of the Board of Governors of the Federal Reserve System to have ex-officio membership, either in person or by representative, in meetings of the full board. The appointed members should, however, be authorized to meet in executive sessions without the ex-officio members if they so desire. The purpose of the ex-officio membership is, of course, to maintain suitable coordination of activities with other branches of the government. Ex-officio members would not be voting members of the board.

This proposal is a compromise between the present organization and the full-time bipartisan board advocated by some farm and Congressional groups. It would retain the advantage of faster and

[10] The organization here proposed could be set up either within the Department of Agriculture, as at present, or outside. There are differences of opinion on this point both in the Congress and among the farm organizations. There was no unanimous view in regard to it in the committee whose report is here under discussion. A decision on it can, of course, come only from the Congress.

more decisive action which can be had with a single executive officer and, at the same time, provide the broader counsel and stabilizing influence that would come from having a board. The committee has studied with considerable care several of the alternative proposals with respect to the executive management of the combined agency. Among these are the proposal for a full-time executive board and for the appointment of the Governor by the board. It is felt, however, that the plan proposed would provide the most efficient operation, the most effective relation to the Congress, and the most clear-cut division between policy-making and executive functions.

The problem of suitable organization for administering government agencies is a very controversial one. Nearly all types of organization have been tried in one or another of the government agencies. Nearly all types have worked well in some cases and badly in others. The personal relations of the individuals concerned outweigh any specific organizational form. Nevertheless, there appear to be some functions which are best handled by an individual administrator while others are better suited to boards and committees. In general, boards function best on judicial and policy matters while individual executives do a better job on operation.

In the management of the farm credit system the principal objectives are as follows:

1. To have available to the Governor broadly representative and competent counsel in the formulation of policies.
2. To provide the Congress with full and competent information on the functioning of the system, the needs for credit, the conditions prevailing in regard to credit, and the legislation and appropriations that are needed.
3. To have clear indication by the Congress of the policies and program it wishes to have carried out.
4. To provide for prompt, efficient executive action on operating problems and clear-cut fixing of responsibility for the execution of policies laid down by the Congress, and for the administration of funds.
5. To provide adequate means for expression of the wishes of the farm people of the country and a suitable channel by which they can be brought to the attention of the executive officers of the system and the Congress.

It is the belief of the committee that these objectives can best be attained by a properly constituted and suitably staffed part-time advisory board with clearly defined functions and responsibilities.

Such a board would have the following duties plus such others as the Congress might choose to assign to it:

1. To counsel with the Governor at regular intervals on general policies of the Agricultural Credit Agency.
2. To make annually, or at its discretion more frequently, a critical analysis of the agricultural credit situation in the United States and to report its findings to the President and to the Congress together with its recommendations for changes in legislation, problems needing attention, policies to be followed, etc.
3. To nominate panels from which the Governor would appoint the appointed members of the district boards.
4. To recommend to the Governor the amounts and kinds of direct lending to be undertaken, within the legislative framework provided, and policies to govern such loans.
5. To suggest studies or investigations needed.

The board should have authority to require reports from the various operating units and to employ a modest staff, directly responsible to it, for carrying on its activities It should convene regularly on a quarterly basis and at other times on request of the Governor or of any two members of the board It should report to the President and Congress at regular intervals, and should make special and supplemental reports whenever it feels that new conditions or new problems warrant it.

The board should give special attention to needed legislation and appropriations, thus providing the Congress with an intimate and informed source of information on these important matters.

Members of the national board should not be allowed to take an active part in local elections of agricultural credit agency officers nor be eligible for appointment to district boards. They should not hold state or federal elective office while serving as members of the advisory board.

The argument has been advanced that a part-time board could not keep in sufficiently close touch with the work of the organization, and that members of advisory boards tend to be lax about attending meetings. While these constitute real problems it is the view of the committee that they are not insurmountable. The facilities for air travel now make it as easy for members to assemble from all over the United States as it was formerly for New York or Chicago people to meet in Washington, or for St. Louis or Omaha

people to meet in Kansas City. Thus the time required for travel has been lessened substantially. The consideration of broad policies is normally handled in even the largest of private corporations by people who do not give full time to that task.

Such a board should, however, have an able but small staff directly responsible to it. Special investigations and the preparation of reports would be assigned to the staff with specific instructions as to points to be covered and procedure to be followed. This would be necessary even with a full-time board since it is obvious that the routine of investigations and studies would not be undertaken by board members. In addition, the board should, of course, have authority to call on any unit of the system for reports or studies it may desire from them.

The tasks confronting the board during the first year or two following any general reorganization of the system would, of course, be more onerous than when the system has reached a more settled stage and is running smoothly. This fact should be recognized by liberal provision for suitable compensation to board members for extra time put in and by furnishing them with every facility for effective work. The regular compensation authorized should be adequate to make appointment attractive to able men of large stature and should be related in some measure to regularity of attendance at board meetings and to effective participation in the board's work.

If, on the other hand, board members were to be appointed on a full-time basis it would be almost inevitable that, after the first period of intensive work on reorganization of the system, they would tend to busy themselves more and more with operational problems and probably to specialize in various phases of the work. This would tend toward divisions within the board, rivalries between branches of the system, and a loss in general efficiency. Experience with the original Federal Farm Loan Board, with the T.V.A., and with a number of other govermental boards illustrates this danger. Under such conditions neither the President nor the Congress would have a satisfactory basis for fixing responsibility for the failure of the system to function satisfactorily.

On the operating side, it is of paramount importance that the system have a strong, able administrator with clear authority and responsibility for making the organization work smoothly and efficiently. Any feeling on the part of employees that advantages

could be gained through by-passing the Governor and seeking favor with individual board members would be sure to weaken the organization. Furthermore, it is important for the Congress and the President to be able to get a clear and unequivocal statement of policy and procedure from a single individual. Without this, in the event of division within the board, neither the Congress nor the President could be clear as to who could speak responsibly for the organization or could carry out effectively the instructions given. This does not mean, of course, that the views of members of a part-time board should not be available to the Congress. The relationship, however, would be that of an advisor to the Congress rather than that of an official directly responsible to it.

For a part-time board it is likely that men having broad experience, large stature, and intimate contact with agriculture could be induced to serve, whereas accepting membership on a full-time board would necessitate severing other connections and looking to a somewhat unsatisfactory status if not reappointed at the end of a term. Also, a board whose members are actively engaged in other phases of agricultural activity could bring to the system a vigorous and realistic attitude which might be lacking in a full-time board. Not least among the dangers from a highly paid, full-time board that might, after a time, be less than fully occupied would be that such positions might be used for political patronage rather than to bring onto the board men who can best serve agriculture and the nation.

It might be argued that the board should select the Governor as would be done in a private corporation. It is likely however that, even if the Governor were to be appointed by the board, the President would have considerable indirect influence in the selection. Since much of the task to be performed consists in administering large funds appropriated by the Congress, it seems appropriate that responsibility for the appointment be fixed directly with the President so that the Congress may have a control similar to that existing in other executive agencies. This relationship also is likely to make the position attractive to men of larger caliber than would be the case if the Governor were to be appointed by the board.

Internal Organization at the National Level

Under the Governor and the board it is proposed that the organization be simplified and streamlined. The suggestion is that there

be two Deputy Governors and two Directors of divisions and that the positions now known as commissionerships be abolished. The functions relating to management in the central office such as legal, budget, personnel, operations, etc., would be attached directly to the office of the Governor and would be supported in part by Congressional appropriations and in part by contributions from the cooperative units, the latter contributions being those amounts properly chargeable to the cooperative system as its share of the general overhead. The Deputies and Directors would have charge respectively of:

a. The Cooperative Credit System
b. The Direct Loan System
c. The Division of Finance and Discounts
d. The Division of Research and Service.

The Deputies would be nominated by the President on recommendation of the Governor and would be subject to approval by the Senate. Their terms of office would be for indefinite periods but subject to termination by the President after appropriate notice. The Directors would be appointed by the Governor.

The Deputy Governor in charge of the Cooperative Credit System would have much the same functions as the Governor of the Farm Credit Administration now has, except for the elimination of the direct lending activities now in the Farm Credit Administration.

The Deputy Governor in charge of direct lending would have many of the functions now assigned to the Administrator of the Farmers' Home Administration, but with some added responsibilities such as those arising in regard to crop and feed loans, disaster loans, etc., if funds are provided for those purposes.[11]

The Director of the Division of Finance and Discounts would supervise the Agricultural Discount Bank, the Federal Farm Mortgage Corporation, the Federal Farm Loan Corporation, the fiscal agent, and the registrars.

The Director in charge of Research and Service would supervise such functions as audit and examination, appraisals, general reports and statistics, and the programs of research, education, information etc., as described elsewhere. Educational, advisory, and service activities with respect to the management of farms and cooperative associations would also come in this division.

[11] The readjustment here implied has been provided for in part in the Farmers' Home Administration Act of 1946.

The Cooperative Credit System

The Cooperative Credit System would consist of the district agricultural banks (described later), the district banks for cooperatives, and the local agricultural credit associations, together with the district boards of directors and other related parts of the system. It would also include many of the activities of the proposed Agricultural Discount Bank and the Federal Farm Mortgage Corporation, though direct administrative supervision of these, as of the proposed Federal Farm Loan Corporation, would be the responsibility of the Director of the Division of Finance and Discounts.

Since the proposed changes in the Cooperative Credit System are more fully discussed under the heading "Organization at the District and Local Levels," they are not presented in this section.

The Agricultural Discount Bank

As a means of simplifying corporate structure, providing a wider base for risk-spreading, and bringing about economies in operation, it is proposed that the twelve intermediate credit banks be replaced by a single Agricultural Discount Bank. The capital and surplus of this bank would be created by transfer of the capital and surplus now in the twelve intermediate credit banks. It would operate much as the intermediate credit banks do now but with a branch or agent in each district instead of a corporation. Ordinary loans would not be sent to the central Agricultural Discount Bank but would be made in the districts, under regulations prescribed by the central bank. Unusually large loans, or those creating special problems, would be forwarded to the central bank. This bank would also make commodity and operating loans to the national and other large cooperative associations, thus performing most of the functions now provided through the central Bank for Cooperatives.

The capital of the intermediate credit banks is now provided by the Government, and they are not cooperative institutions. Their main function is to serve as a channel whereby funds in the money market can be made available to PCA's, cooperative associations, livestock finance companies, and other financial institutions.

The capital now provided for the intermediate credit banks would apparently be adequate for such an Agricultural Discount Bank. Corporate structure would thus be simplified, the handling of debentures would be less cumbersome, and risks could be better distributed.

Under this arrangement loans made by the PCA's would be discounted directly with the Agricultural Discount Bank, and the banks for cooperatives might discount their loans with it or sell their own debentures as they are empowered to do at present. It would apparently be simpler and more efficient, however, for them to use the Agricultural Discount Bank.

Under these proposals the Agricultural Discount Bank, though not cooperative in structure, would be strictly a banking institution not concerned with direct grants of federal funds except as to its working capital. It is suggested that its governing board be constituted as follows: the Governor, the two Deputy Governors, and the Directors of the Finance Division and the Research and Service Division.

The Federal Farm Mortgage Corporation

The Federal Farm Mortgage Corporation performed an invaluable service during the middle thirties and should be retained as a means of meeting similar needs if they should arise. Its authority to purchase farm mortgage bonds in times when they are not readily salable in the money market is an extremely important safeguard to the system. It becomes operative only in periods when there is great need for it. It serves not only the farmer and the farm credit agencies but the private lenders as well by aiding them in increasing their liquidity in times of credit stringency. Since this phase of the Corporation's work is largely inoperative in ordinary times, it does not result in any significant expense to the Government except when brought into use in periods of serious financial disturbance. At such times it is a very effective device for doing the thing most needed, namely, injecting into the agricultural economy large amounts of credit to offset those being withdrawn by private lenders.[12]

In addition to its function of providing a market for mortgage bonds the Federal Farm Corporation was, during the 1930's, one of the most effective antideflation devices set up by the Government in any field. Its refinancing activities performed a major service in checking the wave of foreclosures that was then sweeping over the country. As a whole, this program was well handled and the losses were small in proportion to the severity of the disaster in the farm areas.

[12] Some continuing functions for the Federal Farm Mortgage Corporation are however suggested in a later section of the report.

It is evident that first-mortgage, land-bank loans cannot meet adequately conditions of this kind. The loans on which the land-bank bonds are based should be so conservative and safe that the bonds can command the very lowest rates of interest. Nevertheless, when depressions strike, many competent farmers must have loans running to higher percentages of value. Many of these can be made with reasonable safety provided the farmer can have adequate time to work out of his difficulty. The "commissioner-type" loan has proved an effective device for meeting this need and should be retained as a part of the stand-by mechanism of the agricultural credit system.

In addition to its emergency feature the "commissioner-type" loan can perform another important function, though one which is not so vital, since, in ordinary times private bank loans are available as supplements to the "land-bank" loans. Few purchasers of farms can put up in cash 50 to 60 per cent of the purchase price. The first mortgage loan must be supplemented by a second mortgage loan. This supplementary loan may be and often is supplied by the seller. It may also be supplied by private banks. Usually, however, bank loans of this type lack adequate amortization arrangements and run for too short a period. Furthermore, such loans may cause difficulty for the holder of the first mortgage if the borrower gets into trouble.

To overcome this difficulty a loan of the "commissioner-type" should be available in the system, primarily as an aid to new purchasers of farms. First mortgage loans, as in the past, should be held to conservative levels and financed by bonds sold in the regular capital market. The second mortgage loan should carry up to a percentage of value considered moderately safe in ordinary times but beyond levels suitable for mortgages used as backing for the most conservative types of bonds. These less-conservative loans may well be financed through the Federal Farm Mortgage Corporation as in the past. They might eventually be used as a basis for a different type of bond which might have to be sold at a slightly higher rate. The loans should carry an insurance charge adequate to cover the combined risk on them. Under such an arrangement funds could be secured from the regular money market in ordinary times but probably would have to be supplied by the Federal Farm Mortgage Corporation in times of credit stringency.

Purchasers requiring loans in excess of 75 percent of normal

value would be expected to look to tenant-purchase funds rather than to those available through the district banks and the Federal Farm Mortgage Corporation.

The "commissioner-type" loan should also continue to be used for the so-called "prudent investment" loan; that is, for first mortgage loans on farms that are good loan risks but which for one reason or another are ineligible for regular land bank loans. In most cases these are farms on which part of the income to be used in making payments comes from work off the farm. Here the prospects for repayment may be relatively good but the security consists in part of the borrower's off-the-farm income and hence cannot be levied upon in case of default. Because of this such loans should carry an insurance charge in the same way as the second mortgage loans discussed above. With this provision and a conservative loan policy such loans can be made with reasonable safety and can be a great help to a large group of farmers which has otherwise very limited access to funds, either through public or private lending agencies.

Such a plan would, in the opinion of the committee, make for a well-rounded program of land mortgage loans. Regular first mortgage loans of the system should be limited to 50 percent of the total value of the property. This would be a liberalization of the 50–20 basis of the past, but would keep these loans on a conservative basis.[13] Moderate-risk loans would be handled by the Federal Farm Mortgage Corporation and might go to 75 percent of normal value. Applications for loans at percentages above 75 percent would go to the proposed Tenant-Purchase Section of the Federal Farm Loan Corporation. Tenant-purchase loans when reduced to 50 percent of normal value should be transferred to the district agricultural banks as ordinary first mortgage loans, thus freeing part of the tenant-purchase funds for new loans at higher levels.

In addition to the functions outlined above, it is proposed that the Federal Farm Mortgage Corporation administer, as trustee, the

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[13] This arrangement would allow for more flexibility in lending, particularly on highly developed farms where the improvements represent large percentages of the total value. For highly perishable improvements such as orchards and vineyards it would probably be impractical to make loans up to a full 50 percent of total value. However, such restrictions as might be needed in the interest of safety could be established by administrative regulation. Since this report was written, the Congress has authorized first mortgage loans up to 65 percent of appraised value. This committee considers the conservative first mortgage loan plus a second mortgage loan, as proposed above, a better method of meeting this problem.

insurance funds recommended in a later section. It would also be the logical agency to handle the mechanical arrangements in selling and servicing the mortgage bonds of the Farm Credit Agency.[14]

It is proposed that the "commissioner-type" loans be handled through the district agricultural banks along with the first mortgage loans, as at present, rather than to be handled through the direct loan system. These loans are intermediate as to risks involved, and may eventually come to be financed by means of securities sold in the regular money market if the insurance plan suggested above is adopted. It is clear that they can be administered more efficiently in connection with the first mortgage loans than in a separate branch of the credit agency. Appraisal, supervision, and other costs would all be minimized by this arrangement.

The Federal Farm Loan Corporation

It is proposed that all direct appropriations except those now provided through the Federal Farm Mortgage Corporation be administered through a central loan agency to be known as the Federal Farm Loan Corporation. This would administer funds of the following types:

1. The funds transferred from the banks for cooperatives which would result from segregation of excess capital now in those banks and in the Central Bank for Cooperatives. Regular bankable loans by the banks for cooperatives would be handled through the Agricultural Discount Bank, either as discounts or by sale of debentures through the Agricultural Discount Bank as fiscal agent; but facility loans, temporary capitalization of production credit associations, and special loans to other cooperative associations would be provided by the Federal Farm Loan Corporation, usually through transfer to the banks for cooperatives for administration.
2. Funds appropriated for tenant-purchase loans.
3. Funds appropriated for rehabilitation loans.
4. Funds appropriated for crop and feed loans, disaster relief, etc.
5. Other special funds appropriated for loans based primarily on government credit rather than on securities designed for sale in the money market, except funds to be used for loans of the "commissioner-type."

Thus the various federal appropriations for direct loans to

[14] Arrangements should be made whereby bonds and debentures of the system can be made more available for purchase by farmers, local banks, and other investors. This should overcome some of the criticism of the system since investors would be able to place their funds at their net rental value, over and above risk and service costs. Banks, of course, would still prefer to make loans rather than to purchase securities since they are selling services as well as renting funds. Nevertheless a wider sale of the farm credit agency securities would remove some of the objection. For farmers and other investors some type of security similar to the Government's E bonds might well be considered.

farmers and farmers' organizations would be grouped, coordinated, and simplified and the Congress could readily determine the status of the loan funds for each type of loan, and the needs, if any, for new appropriations.

The various direct loan funds would be administered by the Federal Farm Loan Corporation in accordance with Congressional mandate and under policies and directives worked out by the directors of the Federal Farm Loan Corporation. In most cases the loan funds would be assigned to the district administrators of direct loans or to the district banks for cooperatives for use in their respective districts.

Direct appropriations made for administration of the central offices and for various specific types of service would, however, be made directly to the units that are to use or supervise them—usually, of course, the central agency.

The Federal Farm Loan Corporation would be set up as a government-capitalized and -controlled corporation. Directors, as already stated, would be the Governor, the two Deputy Governors, and the Directors of the Finance, and Research and Service Divisions. It would be desirable that the Secretary of the Treasury and the Chairman of the Board of Governors of the Federal Reserve System also be represented on this board in order to facilitate coordination in fiscal and monetary programs.

Organization at the District and Local Levels

The Cooperative Credit Organization

The corporate structure at the district level appears to be more complex than is necessary, and probably more complicated than it would have been had the whole system been set up at one time. It is essential that all unnecessary overhead be eliminated if these agencies are to operate without substantial subsidies. This consideration is especially important in view of the fact that many of the district and local agencies are in keen competition with private lending agencies. If considerable subsidization is required, the system is somewhat vulnerable to criticism both from the private credit agencies and the public. For reasons discussed more fully elsewhere governmental support may be well justified under certain conditions because of the need for having the cooperative credit agencies available in times of stress. In general, however, farmers

and the public appear to feel that the system should be self-supporting in normal times.

In an ordinary bank there usually would not be a separate corporation for long-term and short-term loans. These would be handled in different compartments of the one institution with a single general executive officer. In keeping with this practice the following structure is suggested:

1. That there be at the district level two cooperative banking institutions, one to be known as the District Agricultural Bank, which would have the functions now performed by the Land Bank plus most of those now performed by the Production Credit Corporation; the other, those of the Bank for Cooperatives with some added functions described below. These would have a single board as at present and might or might not have the same president, as the District Board might decide. (Certain proposals for changing the corporate structure of the land banks in order to eliminate the capital stock provision are discussed in a later section.)
2. As stated in a preceding section it is suggested that the intermediate credit banks be replaced by a single, government-capitalized, discount bank with an agent or branch in each district.
3. The cooperative associations have frequently expressed a desire to carry through the original plan of having the banks for cooperatives become borrower-owned and largely borrower-controlled along lines similar to those laid out for the federal land banks. Since the banks for cooperatives now have large amounts of capital stock and guarantee funds supplied by the Government, it is evident that a change to borrower-ownership and control would require considerable time, and would have to be worked out with appropriate safeguards for assuring effective service during a rather lengthy period of transition.

It is the opinion of this committee that the banks for cooperatives can and should be eventually owned by the borrowing cooperatives, but that they also should administer certain funds to be provided by the proposed Federal Farm Loan Corporation for facility loans, capitalization funds, etc. These are more fully described elsewhere. It is suggested, therefore, that the capital stock and guarantee funds now provided to the banks for cooperatives be adjusted to the amounts needed in carrying on a regular banking business consisting in the main of commodity loans and operating loans to cooperative associations. The amounts not needed for appropriate capitalization of the banks would then be transferred to the Federal Farm Loan Corporation for use in making facility and capitalization loans as described below. Under the plan proposed there would still be, in case of need, assurance of support for the banks for

cooperatives through the funds transferred to the Federal Farm Loan Corporation. There would be, however, a clearer segregation than at present of the phase of the business suited for ultimate borrower ownership and control.

Attainment of borrower ownership of the capital of the banks for cooperatives might be either through purchase of stock by the cooperatives or by a small additional interest charge flowing to a revolving fund, which would be rotated after retirement of the government capital and establishment of an adequate working fund. If the revolving fund plan is used, the participation in management would be through memberships of nominal value in accordance with practices already used by many cooperative associations in financing their own operations. If stock ownership is preferred, the requirement for stock ownership should be on a more permanent basis than it now is so as to insure continuously an adequate capital fund.

For most of the banks for cooperatives a rather modest current capitalization would appear to be adequate since loans would not be made from capital but would be discounted with the Agricultural Discount Bank or would be financed by direct sale of debentures.[15] Commodity loans, for the most part, consist of attractive commercial paper that does not involve large risks if the percentage advanced is conservative. Operating loans present more problems, but, with a well established network of cooperative associations under guidance from the banks for cooperatives, the financial situation of the individual associations should improve fairly rapidly. The building up of revolving capital funds *in the cooperative associations* should provide eventually most of the operating funds needed by them except for amounts needed for so short a time as to make self-financing undesirable.

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[15] It is objected by some that the banks for cooperatives cannot compete with commercial banks on this basis. It should be recognized, however, that the present extremely easy money market is probably somewhat abnormal and that competition of this kind may not be so intense if the money market becomes more firm. If it should continue, it is hard to make a strong case for tying up large amounts of government money in order to create competition in a loan market already supplied at extremely low rates of interest. Careful study should be given, however, to the possibility of giving the banks for cooperatives more flexibility in meeting competition of this kind. With the larger loans usually supplied by them they may be able to handle money on narrower spreads than would be appropriate for funds secured to finance farm production loans.

District Boards of Directors

Under the organization proposed there would be a clearer segregation of the cooperative units of the system from the direct loan activities. As this comes into effect it would seem appropriate that more authority be granted to the district and local boards. Until government capital is largely retired, the Governor should have a controlling voice in the selection of district boards as at present. When government funds have been retired from the Agricultural Bank and the Bank for Cooperatives in any district, the cooperative units should then be given more authority in the selection of directors.

To this end it is suggested that after that stage is reached the directors be selected as follows:

Two elected by the local agricultural credit association.

Two elected by the members of the banks for cooperatives.

Two appointed by the Governor from nominations made by the local associations.

One appointed by the Governor.

At such time as the banks for cooperatives come to be owned substantially by the member cooperative associations, it may be desirable to consider having a separate board of directors for each of those banks, such board to be elected in the main by the participating associations. This would leave as the function of the other district boards mentioned above the supervision of the land-mortgage and PCA loans.

The basic conception of the plan outlined above would be to bring all governmentally sponsored loans for cooperative associations into a single system designed to be eventually self-financed and self-supporting. The special fund which was originally appropriated under the Agricultural Marketing Act of 1929 would be used in accordance with its original purpose (aside from the price stabilization phases), namely, to aid in establishing a sound system of agricultural cooperatives. It would be broader, however, than merely to aid cooperative marketing associations. It could supply facility loans and capital for cooperatives of all types.

Functions Now Handled by the Central Bank for Cooperatives

There are some types of loans to cooperatives that are not well suited to the resources and area limitations of the district banks

for cooperatives. Among these are the loans made to national and regional cooperatives and some of the larger loans needed within given districts.

Under the plan proposed, national and regional cooperatives would deal directly with the Agricultural Discount Bank on commodity and operating loans. Large loans to cooperatives within a given district (except facility loans) would be handled as at present except that they would be turned over to the Agricultural Discount Bank instead of the Central Bank for Cooperatives, or possibly be handled jointly by the district Bank for Cooperatives and the Agricultural Discount Bank.

Facility loans would be handled either from Federal Farm Loan Corporation funds assigned to the district banks for cooperatives, or, if too large for the district bank or if requested by an association that operates in more than one district area, they would be handled directly by the Federal Farm Loan Corporation.

Merging of NFLA's and PCA's

It is suggested that the plans contemplate the merging of the NFLA's and the PCA's into a single series of local farm credit associations.[16] While it is probably unwise to make such consolidation mandatory, the farm credit agency should make it a settled policy to move in that direction as fast as practical. The necessary permissive legislation should be provided, and the district banks should encourage such merging and give active help in working out revisions of territory and other problems requiring solution. In some situations there are, of course, sound reasons for not merging the two kinds of associations. Here the aim should be to settle upon a logical pattern of area coverage based upon efficiency of operation rather than historical precedent, and to make the adjustments to it within a reasonable period of time. Conditions of this kind might be found, for example, in certain of the mountain states where a small, compact, irrigated area concerned mainly with land loans might be found within a much larger range area chiefly concerned with livestock loans. In situations of that kind it would probably be inadvisable to bring both associations to the scope of a common territory, and there might be very little duplicating membership in the two associations.

[16] Considerable progress looking in this direction has already been made in several of the districts.

The process of merging these two types of local associations would be carried out by means of a series of intermediate steps which would be roughly as follows:

1. Urge readjustment of areas served so that the boundaries of the PCA's and NFLA's would coincide. This implies some contraction of territory for many of the PCA's and some enlargement of territory for some NFLA's.

2. Encourage election of the same members to both local boards of directors. This, however, would require some change in the law since it may be that land bank borrowers will not be PCA borrowers and vice versa. After the more complete merging contemplated, memberships would not be by classes of loans, but in the combined association. It does not appear necessary to provide for election of specified numbers of directors to represent each type of loan since many would have both types and the desire for successful operation of the association would tend to preclude serious unbalance in the boards selected.

3. As soon as practical, put the handling of the local offices of both the NFLA and the PCA under a single administrative officer. Possibly a different name for such an officer than the present one of "Secretary-Treasurer" might be more appropriate. Where considerable business is transacted, there would be need, of course, for additional employees, but these would not be of coordinate rank even though they were specialists on one or the other type of loan.

The eventual organization contemplated would be a farm credit association on a membership basis with the membership continuing for as long as the member is farming in the community, unless canceled for cause by unanimous vote of the directors. One membership would entitle the borrower to participate in either type of loan activity. Such an arrangement would give most borrowers a more continuous contact with the association and would tend to bring about increased interest in the affairs of the association. As at present members would cease to be voting members after specified periods in which they have not been borrowers.

Since the production credit corporations would be eliminated, supervision of the PCA's until such time as they are merged with the NFLA's would be vested in the district agricultural banks, except for such control as would result from any capital loans made through the banks for cooperatives.

Since the plan proposed provides a measure of joint liability for losses, the local association should be free to refuse membership when in doubt about the financial responsibility of the applicant. This might, however, be handled merely by refusal to loan even

though membership had been granted. Normally such borrowers would be forced to seek either direct government loans or private lending agency loans. It is probable, however, that the district banks should have authority, as at present, to make some loans direct to borrowers at a higher rate of interest. This would take care of isolated borrowers and also could be used if desired as a means of handling situations in which applicants appear to have been unwarrantedly excluded from membership in the local association.

District Coordinating Committee

It is suggested that, as a means of coordinating the discount function at the district level with the activities of the district Agricultural Bank and the Bank for Cooperatives, the appointment of the district agent or manager for the Agricultural Discount Bank be made by the Agricultural Discount Bank subject to approval of the district board of directors, and that he be a member of a district Coordinating Committee of which either the president of the district Agricultural Bank or the president of the district Bank for Cooperatives (depending on designation by the Governor) would be chairman. In appointing the chairman of the District Coordinating Committee the Governor would delegate to him authority for coordinating the various activities at the district level. He would thus have the duties and powers now assigned to the General Agent, and the position of General Agent would be eliminated as a separate office. The chairman of the coordinating committee would, however, hold two positions, one as president of one or both of the banks and one as coordinating officer. Other members of the coordinating committee would be the president of the other bank, if each has a separate president, the district representative of the Agricultural Discount Bank, the District Administrator for Direct Loans and the District Administrator for the Research and Service Division. The Governor might, at his discretion, designate certain other individuals as members of such coordinating committee if there appears to be need for closer correlation of their work with that of the the other units.

Substitution of Insurance Funds for Capital Stock

The capital stock and surplus of the NFLA's, PCA's, Federal land banks, and banks for cooperatives were intended as equities to protect the purchasers of bonds and debentures in case of losses on specific assets pledged as backing for those securities. This ar-

rangement has not worked well for several reasons, among them the following:

1. Many local associations have not been able to build up reserves adequate to absorb losses assignable to them under present laws and regulations.
2. If losses were absorbed through charges against capital stock, the association's capital was impaired and its ability to make new loans restricted.
3. If stock capital is not to be used for absorbing losses, it becomes an unused reserve which is of little significance except in case of liquidation of the association.
4. The distribution of losses under existing provisions is not in keeping with the financial abilities of the various units nor with the actual responsibilities they have in making the loans. Drouths, depressions, or other disasters often strike whole areas or even regions and cause losses that are beyond the risk-taking abilities of the local or district units involved. They may not be related to quality of management. Such risks must be spread more widely and under a different plan of distribution than in the past if such hazards are not to result in destruction of the capital structure of local units and even of whole districts from time to time. This principle is recognized in the existing plan of organization which provides for some joint assumption of risks, but the arrangements now provided result in unnecessary impairments of capital and the immobilizing of some of the equities designed for absorbing such risks. That is, the actual use of such capital funds for absorbing losses results in capital impairment.

To meet this problem it is proposed that certain insurance funds be established along lines indicated below and that the capital stock provisions now in use be gradually replaced by a membership plan accompanied by insurance funds. Aside from the other advantages mentioned, this would place the system in a better position to meet the competition of private lending agencies since it would remove the necessity for purchase of stock in order to get loans.

The proposals for modifying organization and changing the method of absorbing losses are as follows: The voting rights of new members of the local farm credit associations would be put in the form of memberships rather than ownership of stock. In combined associations a single membership would entitle the holder to apply for either mortgage loans or production loans, or both.

To provide the margining funds now created through purchase of stock and accumulation of surplus, two insurance funds would be established, one for land loans and one for production loans. (Certain other insurance arrangements are proposed, but these would

be the principal ones in the Cooperative Credit System.) The insurance accounts for the local associations would consist, at the beginning, of the surplus then owned in each association plus any assignment of funds that might be made from existing reserves of the district banks, these funds to be supplemented at the beginning by loans of such amounts as may be necessary from the Federal Farm Mortgage Corporation.[17] The arrangement proposed does not differ greatly in principle from that contemplated in setting up the system under a capital stock plan. It does differ as to mechanics and would provide more flexibility and fuller use of funds set aside as security to supplement the specific assets on which bonds and debentures are based.

After establishment of the membership plan each new loan would carry an insurance charge of one-half of one per cent(or such other amount as might be found necessary) in addition to the regular interest charge. This one-half percent would be paid into three insurance funds: one at the local level, one at the district level, and one at the national level. Losses incurred would be paid out of these insurance funds on the basis of one-third from each as described more fully in a later section. The collection of this one-half percent insurance charge would not mean a net increase of the full half percent since the borrower would not be paying for or foregoing interest on the capital stock as at present. The present cost to the borrower, on mortgage loans, amounts to about .25 of one percent (at 4% on a 5 percent stock investment carried throughout the life of the loan.) The insurance funds would not be available for regular operating expenses.

It is suggested that the Federal Farm Mortgage Corporation loan to the local insurance funds and, if necessary, to the district and national funds such amounts as may be needed for initiation of the plan. When such a loan by the Federal Farm Mortgage Corporation, if made, has been retired, the insurance fund would be handled in a way similar to a revolving fund in a cooperative marketing association. Any excess above the minimum requirement for safety would be paid back to the borrowers as a patronage refund.

The insurance funds should be built up until they would equal at

[17] This would require establishment by the Congress in the Federal Farm Mortgage Corporation of an initial insurance fund adequate to initiate the program. Such a plan would be comparable to the plan used in starting the Federal Housing Administration insurance plan and a similar one in the Federal Deposit Insurance Corporation.

least 10 percent of the outstanding loans covered by them (or such minimum as may be established by the district boards and the Governor.) After the fund has been built up to where it provides an adequate margin of safety, the full amount of the local association's share of the retain would be paid out to the insured borrowers if there were no losses. Losses chargeable to the local association would, of course, come out of the association's account in the insurance fund. The insurance fund would presumably be invested in conservative securities and the income from these securities might be used for operating expenses as is done at present in the PCA's.

Up to the present time practically all reserves in the system have been built up in the land banks. Under the plan proposed, reserves for meeting losses would be built up at the local, district and national levels. Reserves now in the land banks would be retained as added coverage (above the capital stocks of local associations) to meet possible losses on loans now held, since these and the stock constitute backing for the bonds now outstanding. However, since both the borrower equity and the capital stock backing increase as the loan is paid down, the district banks should be able either to declare increased dividends or make some contribution to the insurance funds of the locals as the volume of stock-margined loans declines. It is likely that in many cases the transition could be speeded up through voluntary change-over to the insurance plan, with the consent of the borrower and the bondholders. In that event stock held by the borrower would be retired and he would come under the insurance plan.

It is important that the refund of insurance charges not needed for meeting losses be initiated at as early a date as possible, since this will focus attention on the relation between losses and refunds, and make clear in the minds of the borrowers that the extra half percent is not merely an increase in the regular interest charges.

The operating income of the local association under this plan would consist of the spread between the cost of funds and the basic interest rate charged the borrower plus the income from securities. Dividends might be paid from the operating income whenever income is above expenses if the board so decides. The board could, however, at its discretion build up a liquid reserve for operating purposes from which loans could be made before pledging of the notes or mortgages. The dividends mentioned above would be on the

basis of the amount of interest paid in during the preceding year.

The procedure outlined above implies assigning to the local association both on mortgage loans and production loans a definite and regular percentage of income on the loans outstanding. In other words, the operating income of the local association would not depend upon specific grants by the district directors, as is the case for many of the NFLA's at the present time. This, of course, opens up the possibility that some associations with a large volume of business might conceivably operate extravagantly at the local level and not return as much in dividends as would be possible. This, however, seems to be a responsibility the local board should take and not one that should be controlled by the district administration unless there are flagrant abuses.

A more difficult problem arises where, even with conservative and efficient management, a local association is not able to get enough to pay its way. This might occur in situations where the competition is unusually keen and effective or where the association is very small. Some provision should be made in such conditions whereby the Federal Farm Loan Corporation or the district bank can make to the local association sufficient contribution to keep it in existence and available in times of great need.[18] As yet, there seems to be no assurance that farmers will give as much business to the Cooperative Credit System in times when credit is readily available as they will when credit from other sources is difficult to get. It is undesirable, however, that the cooperative credit association should have to go out of business in such a period since it is likely to be greatly needed when another period of stress comes on. If such grants are necessary, the district administration should have authority to supervise the local management until the association is self-supporting and should have authority, when it feels the deficit is due to bad management, to require a change in management as a condition of giving the support indicated above.

Under the plan proposed above, capital stock would gradually

[18] For many associations, especially in areas where most of the farms served are small, a major difficulty lies in the high cost of making small loans. Consideration should be given to handling such loans more informally and insuring to cover losses that might result from omitting title search and official inspection, these functions being replaced by informal reports and recommendations by local directors or members of the association. There is good reason to expect that the losses chargeable to such an insurance fund, on small loans, would be less than the cost of making formal inspections and title searches. If the charges to the borrower were continued the income of the association would benefit by the difference between the charges made and the cost of the insurance. This, if substantial, would put associations serving such areas in a much better position than at present.

be eliminated from both the local farm credit associations and the district banks. Instead borrowers from the local associations would have a continuing membership at a nomimal cost and the association would have two insurance funds and two operating funds, one each for long-term and short-term loans. Operating expenses would be borne by the two operating funds in proportion to the costs of providing the two types of service. The insurance funds would provide the local association's share in losses in the respective categories, and would, in the course of time, be paid out in patronage dividends, except for losses that may have been incurred.

The local farm credit associations would in turn have memberships in the district banks, and the land bank stock would be retired. The district bank would also build up two insurance funds, one to cover losses on mortgage loans and one to cover losses on short-term loans. These would be derived from the insurance charges on loans and, as they come to exceed amounts needed for insurance purposes, would be refunded to the locals.

It is suggested that, as a means of clearly segregating the insurance funds from operating income, they be administered by the Federal Farm Mortgage Corporation. This might mean that the accounts for each district would be maintained within the district, but by a representative of the Federal Farm Mortgage Corporation rather than by the district bank. The Federal Farm Mortgage Corporation representative would operate in a trustee relationship, receiving the payments made by the local associations and the district bank and disbursing them in accordance with the regulations adopted.

The national insurance funds would come from the assignment to these funds of their one-third of the insurance charge collected on each loan. These charges presumably would not be added risk costs but instead a further spreading of risk.

Whenever the national insurance funds are judged adequate to meet probable demands on them, the amounts paid in would be refunded currently except for any losses incurred by them.

There are several ways in which losses incurred might be distributed.[19] In the opinion of this committee it would be desirable to maintain a decentralized system in which losses would normally be borne equally by the local, district, and national insurance

[19] One alternative that has been suggested is that there be a single national insurance fund and that all losses be borne by it. This, of course, would imply paying into the national fund all insurance charges collected, and variable premium payments for the different local and district units based on their loss histories. It would,

funds. The principle underlying the existing system (for mortgage loans) is that losses will be borne first by the local association in which they occur. If they exceed the financial abilities of the local association, they become obligations of the district bank. If they run beyond the power of the district bank to meet them, they are borne by the system as a whole through a plan of pooling reserves.

In making loans the units at all three levels assume some responsibility; the local unit through its recommendation of the loan, the district unit through its approval of the loan, and the national organization through its appraisal service and general regulations. Because of this the equal sharing of loss recommended above is suggested. In the event, however, that the insurance fund of the local association is exhausted as a result of such losses, its share over and above what could be borne by its insurance fund would be assumed by the district bank in the form of a loan from its insurance fund. If losses are so widespread in the district that the district bank's insurance fund is insufficient to meet its share, plus any deficit in contributions by the locals in its district, the remainder would be assumed by the national insurance fund as a loan to the district fund. Losses exceeding these resources might be met by grants or loans from the Federal Farm Mortgage Corporation or by special appropriations made by the Congress. So general a catastrophe would not be likely to occur except in a nationwide breakdown of farm incomes such as that of 1932. In such a case the Congress would likely come to the rescue of the system.

Where presumably temporary or localized financial difficulties lead to a need for extensions of time on loans otherwise considered good, loans would be made from the insurance funds of the district banks to their locals or from the national insurance funds to the district banks in order to permit such extensions of time.

The proposal made above that the Federal Farm Mortgage Corporation administer the insurance funds would probably increase the confidence of local associations that the insurance funds were separate from the operating income and expenses and were held as separate and distinct funds rather than merely as book accounts in the district banks.

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however, result in less incentive for careful handling of the loans of a given association or district since classifications for the purpose of fixing premium rates probably would not be changed at frequent intervals and heavy losses in a given local or district would penalize other units to the same extent as the one in which the losses occurred.

THE FEDERALLY SPONSORED CREDIT SERVICES TO AMERICAN AGRICULTURE

C. THE DIRECT LOAN SYSTEM[20]

Contrary to popular understanding, direct government lending is not a creation of the "New Deal" but had its beginnings in a feed and seed loan program initiated by order of President Woodrow Wilson nearly thirty years ago. The idea was given legislative sanction and greatly extended through the Agricultural Marketing Act of 1929, the regional agricultural credit corporations of 1932, the Resettlement Administration of 1933 and its successors, the Farm Security Administration of 1937 and the Farmers' Home Administration of 1946. At the present time direct government loans to farmers are administered in the main by the Farmers' Home Administration. The program as at present interpreted represents not merely an addition to the publicly sponsored credit service to American agriculture but a new approach to the farm credit problem and a new philosophy of government responsibility to low-income farmers. The principles which the committee felt should govern loans of this type have already been stated in the introductory section of the report. The comments which follow relate therefore in the main to organizational arrangements designed to implement those principles.

The Direct Loan Division would have three main functions from a credit standpoint:

1. To make loans to meet distress situations.
2. To make loans designed to improve the status of farmers in cases where this cannot be done through regular types of loans.
3. To provide long-term land-improvement or land-amelioration loans of types not suited for handling through the usual land-loan procedures.

There may be need occasionally for other types of direct loans, as for example, loans made to encourage certain new types of production for war purposes. It seems likely, however, that these will not be needed in ordinary times.

As stated in the preceding section, it is proposed that all direct appropriations, except those now provided through the Federal Farm Mortgage Corporation, be administered through a central loan agency to be known as the Federal Farm Loan Corporation.

[20] Presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947, by George H. Aull.

In keeping with the organization proposed above, there would be in each district a district administrator of direct loans who would be under the supervision of the Deputy Governor in charge of the direct loan program. The district administrator would have offices in the same building as the district units of the cooperative loan system and would be a member of the district Coordinating Committee described in an earlier section of the report. He would have charge of the field staff for all direct loaning activities including, where necessary, state offices as well as county offices.

It is contemplated that, in the main, the direct loan system would use the facilities of a Research and Service Division (elsewhere suggested) rather than to build up a large staff of specialists of its own. Its own personnel would be used primarily for making, servicing, and collecting its loans, *except for such amounts of supervision and general service as could be carried on more economically through its field staff than by the Research and Service Division.*

The district administrator for direct loans should consult from time to time with the district board in order to have its advice and counsel, and should be permitted, if he so desires, and with the consent of the Governor, to establish a small advisory committee for counsel on the direct loan program. Such advisory committee, if created, should be appointed by the Governor with the advice of the district Coordinating Committee.

Kinds of Loans to Be Made by the Federal Farm Loan Corporation

The funds of the Federal Farm Loan Corporation would be used for the following purposes and such others as might be designated by the Congress:

1. To make various types of disaster loans of the types formerly provided as crop and feed loans, disaster relief loans, flood relief loans, and Regional Agricultural Credit Corporation loans.

2. To make habilitation loans of the kind now provided through the Farmers' Home Administration.

3. To make tenant-purchase loans. These would be provided as at present, subject to such criteria as the Congress might establish, but would be transferred to the cooperative loan system when paid down to levels that would make them eligible for cooperative-type first mortgage loans. While this procedure would concentrate the tenant-purchase loans in the higher-risk brackets more than is done at present, it would have two offsetting advantages. It would free a part of the tenant-purchase funds at an earlier date so that more loans of that type could be made, and it would avoid giving an unwarranted advantage to tenant-purchase borrowers after they have reduced their loans to levels at which they are eligible for regular

cooperative loans. If the interest rates on tenant-purchase loans should be lower than those on regular cooperative loans, as at present, the tenant-purchase borrower who had reduced his loan to 50 per cent or less of the value of the farm would be getting his loan at a lower rate of interest than the cooperative loan borrower, who presumably would be no better off financially.

4. To make facility loans to cooperative associations and in special circumstances to make operating loans where these are considered desirable and cannot be obtained from other sources. For most of the established associations this would mean amortized mortgage loans on facilities with relatively low risks. It would also permit of some higher-risk facility loans for new associations just getting started or those seeking to correct an unsound capital structure. At the discretion of the Federal Farm Loan Corporation, the District banks for cooperatives could also be authorized to grant operating loans of specified types. The procedure would be for the Federal Farm Loan Corporation to assign portions of the funds available to it for administration by each of the district cooperative banks under regulations prescribed by the corporation and with suitable compensation to the district banks for services rendered. The amount of such business is likely to decline with time since most successful cooperative associations will wish to retire indebtedness on their facilities as soon as they are able to do so. Unusually large loans would normally be handled directly by the Federal Farm Loan Corporation.

5. If the Congress should wish still further to simplify the structure for financing agriculture, a similar arrangement could be made for handling the facility loans of the Rural Electrification Administration. Here again the basic concept is that of a cooperative association. The Agricultural Credit Agency should not take over the engineering and development aspects of R.E.A. but might well handle the financing of the associations once they are established. This would per[mit] R.E.A. to release its funds shortly after construction of lines and to g[o] to other business, leaving the long-term supervision of the loans to th[e] nks for cooperatives, with R.E.A. providing only such continuing ed[u]nal and advisory aid as may be needed. Under such an arrangement the electric power cooperatives should probably pay the same rates on facility loans as would be charged to other cooperatives. Whatever subsidy is desirable would appear in the difference between cost of R.E.A. and the loan the Federal Farm Loan Corporation would be willing to make, and would come out of R.E.A. funds. Thus the Congress would have a clear view of the subsidy required and could decide on the scale of development in accordance with this knowledge. Once the loan had been taken over by the Agricultural Credit Agency the Association would presumably be on a sound cooperative basis and without excessive capitalization; hence the association could become a part of the normal cooperative structure in American agriculture.

6. To provide necessary participation in the capitalization of the PCA's[21]

[21] In this and the succeeding paragraph, for simplicity in presentation, reference is made to the PCA's and NFLA's though proposals are made elsewhere for combining them. The reference here is to the capital funds margining these types of loans rather than to the specific organizations.

This would mean turning over for management through the Federal Farm Loan Corporation the assets now owned by the production credit corporations and abolition of the production credit corporations as separate entities. Government participation in the capital funds of the PCA's would be handled through the banks for cooperatives, either through stock purchase as at present or through loans somewhat comparable to facility loans for other types of cooperatives. The PCA's are a type of cooperative, and would seem to fit appropriately into an arrangement of this kind. Since it is proposed that their operations, aside from the capital loans here suggested, would be supervised by the district agricultural banks, there would not be need for a separate set of corporations to supervise and finance them. The aim would be to get them onto a self-capitalizing basis as soon as practical. This would not preclude, however, the possibility of a stand-by relationship under which Federal Farm Loan Corporation funds might be used as a means of coming to their rescue in times of stress or even of providing some continuing aid in situations where, under well-defined policy, it is considered desirable to maintain a PCA organization even though it is unable to be entirely self-supporting.

7. Federal Farm Loan Corporation funds might also be used if needed in transition financing of NFLA's where some government funds are necessary to enable them to work over onto a sound self-financed basis and in special situations where the public interest will be served by keeping them in a position to make new loans even if they are unable to keep themselves on a fully self-supporting basis. Like the PCA's, the NFLA's are in essence cooperative associations and such loans would be in many respects comparable to facility loans except that the security would rest on prospective earnings rather than physical facilities. In these cases the loans would presumably be of a transition character rather than a continuing support. They would be provided under plans designed to rehabilitate the cooperative, and put it on a sound basis.

8. For making such other types of direct loans as the Congress may decide to make available.

Local Organization for Handling Direct Loans

The following comments relate only to organization consistent with the principles previously discussed and are not intended to indicate policy.

It is suggested that there be a single supervisor at the local level for all direct government lending except commissioner-type loans, such supervisor to have specialized assistants, if needed, to handle the work. This supervisor should, if possible, be housed in the same building with the local agricultural credit association but not necessarily in the same office. He should not be under the direction of the local board nor of the secretary of the cooperative loan association, but would be under the supervision of the district (or state) ad-

ministrator of direct loans. It would be desirable, however, that the local supervisor of direct loans, or the chairman of his advisory committee, be an ex-officio member of the local board of the credit association and that the secretary or president of the credit association be an ex-officio member of the local advisory committee to be discussed in a later paragraph.

The local supervisor of direct loans would handle all types of direct loans except those of the commissioner-type, and those which may be assigned to the district agricultural banks and the banks for cooperatives for administration under mutual agreement between these cooperative units and the Federal Farm Loan Corporation. With the exceptions noted above, the local supervisor of direct loans would be concerned with tenant-purchase loans in the mortgage field, and with rehabilitation loans, crop and feed loans, Regional Agricultural Credit Corporation loans, and other emergency types of loans in the short-term field.

For most loans of these types there is need for more supervision and educational aid to the farmer than for loans under the cooperative system. It is proposed, however, that in the main such aid be provided as a separate function through the Research and Service Division instead of being handled by the loan administrator. Thus the cost of making such loans and the losses incident to them would appear more clearly instead of being intermingled with other expenses which may well be regarded as a part of the government's educational program for farm people. It is to be expected, however, that it will be found more workable and efficient to have some of the supervisory and educational work handled by the loan staff. Separation of the two functions should not be so rigid as to result in unworkable arrangements. The combining of them, where it seems advisable, should, however, be in accordance with regulations established by the Governor rather than merely at the discretion of the district administrator of direct loans.

Local Advisory Committees for Direct Loans

The local supervisor of direct loans should have an advisory committee consisting primarily of local farmers but with some other members with broad community interests. This advisory committee would guide him in local lending activities and, in addition to establishing general policies, would advise as to whether direct loans should or should not be made, and to whom. In other words, it would

operate in much the same way as the committees that are now concerned with tenant-purchase loans. Presumably the final decision on making loans of this kind would rest with the regional administrator of direct loans as the representative of the Deputy Governor in charge of direct lending activities. The reason for suggesting a separate committee to advise on direct loans is that those favorable to direct loaning activities are very likely to feel, first, that the governing board of a local cooperative credit association would be biased in favor of the cooperative system and inclined to turn down any loans that could not qualify under that program and, secondly, that such boards are likely to be made up of the more conservative farmers of the area and hence might not give sympathetic consideration to marginal borrowers such as would be handled under the direct loan program.

THE FEDERALLY SPONSORED CREDIT SERVICES TO AMERICAN AGRICULTURE

D. PROVIDING NEEDED SERVICES RELATED TO AGRICULTURAL CREDIT[22]

A reorganization along the lines that have been suggested brings together in one organization the service functions of the existing agencies and may make it possible and desirable to add some services. It is suggested, therefore, that the various supplementary functions not directly concerned with the management of credit, which are now performed in various parts of the Farm Credit Administration and the Farmers' Home Administration, be consolidated in a separate Research and Service Division which would, where practical, provide specialized service for the various parts of the system. Such a consolidation and clear-cut division of labor between banking and service functions should bring savings in cost, increased efficiency, and greater elasticity in responding to changing needs for service. Specialization would enhance the standing of the service units in the eyes of the professions, and thus they would become more attractive to well-qualified personnel. It could also lead to wider utilization of regional experience, observations, and analyses than is possible at present with service activities more widely scattered.

The proposed Research and Service Division would include an Appraisal Section; a Farm Management Section; a Cooperative Management, Service, Audits, and Examinations Section; a Statis-

[22] Presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947, by Glenn W. Hedlund.

tical Section; a Research Section; and an Information and Education Section. There would also be, in the proposed Federal Farm Loan Corporation, a Liquidation Division which, for convenience, is discussed in this section together with the activities of the proposed Research and Service Division.

The Appraisal Section

It is suggested that the appraisal service of the federal land banks, which is now supervised by the Farm Credit Administration, be placed under the Director of the Research and Service Division of the combined Agricultural Credit Agency, and that it be expanded and made generally available to government agencies and the public.[23] There is a genuine need for the services of a reliable appraisal system both for the various government agencies and for private agencies and individuals as well. Even if such a reorganization of the agricultural credit system as that proposed should not be undertaken, there would be very good reason for making a consolidated and expanded appraisal service available to various government agencies.

Administrative consolidation along lines already suggested should result in central management and supervision of a national appraisal service, but not centralization of the appraisal work itself. The recommended expansion of service would mean that the one agency could handle not only the appraisals for the land banks, but also those for the tenant-purchase division of the Farmers' Home Administration, those of the farm loan division of the Veterans Administration, and of similar agencies such as state loan agencies for veterans.

Such an appraisal service could also be very useful in connection with receiverships for farms under state or federal laws, such as the Frazier-Lemke amendment to the Federal Bankruptcy Act, and for valuations under inheritance tax laws.

The reasons for these general conclusions are as follows:

1. The Farm Credit Administration has undoubtedly the most comprehensive body of scientific information and the largest staff of trained appraisers in the country today.
2. Some of this information and training was acquired at public expense and should be made as widely useful as possible, with due consideration for the welfare of the organization.
3. It would be wasteful and time-consuming for agencies like the Farm-

[23] For a detailed discussion, see: Karl Brandt, "A Public Farm Land Appraisal Service, Its Desirability and Practicability," this JOURNAL, August, 1945.

ers' Home Administration and the Veterans Administration to duplicate these facilities.

4. It is important from the standpoint of Government relations that the various governmental appraisals be on a comparable basis.
5. A nation-wide consolidated and publicly available farm-land appraisal service would exert a very wholesome stabilizing influence on the formation of public opinion about the earning capacity of land and its value.
6. Such a broadening of activities could lower appraisal costs for all of the government agencies; for the land banks by increasing and stabilizing their work-load; for the Farmers' Home Administration and Veterans Administration by providing better service at lower unit cost than they could provide for themselves.
7. Such a plan would make for a clean-cut separation between the function of making appraisals and that of granting loans. This is desirable in order that the appraised values not be merely "loan values" expressing to a considerable extent the appraiser's opinion about how large a loan should be made on a particular farm.

The extension of a service of this kind to the general public presents some problems, none of which seems insurmountable. It is suggested that the administrators concerned explore the possibility of determining in the appraisals several specific types of value (such as "normal value," "market value," and "distressed sale value"). Every appraisal would indicate in a standard explanation what prices for the principal products of the farm were assumed in the determination of normal value, and that the appraisal relates to the earning prospects of a typical farmer on the appraised farm.

The prospective purchaser, seller, or lender would have to draw his own conclusions in using the appraisal for his purposes. While the appraisal would put strong emphasis on the sustained earning power of the land, it would give the purchaser a good basis for comparing relative qualities of various farms. The comprehensive data available in the land banks with respect to soils, water tables, frequency of drouths, and similar factors would thus come into wider use than at present.

By making such an appraisal service available to the public, the basis for land bank appraisals would become more widely known than at present. Public discussion of the methods used and the principles involved would be a wholesome means of educating the public about the important issue of land values. This advantage would, it is felt, outweigh the possibility that the change may pre-

sent land bank officials with some difficulties. In fact it can hardly be assumed that information on land bank appraisals is not at present fairly widely available to other institutional lending agencies, particularly since the latter in many cases have hired men who were formerly land bank appraisers.

The land banks continuously must defend their evaluations. They may well face the issue and defend their position as being one that is in the long-time interest of the nation and of agriculture. A wider knowledge of what farmers could expect to borrow in the form of land bank loans may have some steadying influence on land values.

It is to be expected that individuals and agencies wanting to sell lands at high prices will oppose the use of such an appraisal service. However, since there would be no compulsion to use it, and the service would be offered at cost, there could be little in the way of legitimate criticism on the score of improper expansion of government-supported action or unfair competition with private agencies.

The Farm Management Section

This section would be staffed with farm management specialists with special regional knowledge and experience. Their service as consultants, professional farm managers, or supervisors of farms would be available to the various parts of the credit system for dealing with specific borrowers and farms. The costs of such service would be charged to the credit agencies calling for it. In so far as such service is a necessary part of direct lending activities, e.g., in rehabilitation or tenant-purchase loans, these costs would be provided through separate public appropriations for this purpose. If the cooperative credit system makes use of such services, it would bear the costs as normal operating expenses, since such service should tend to reduce credit losses and debtor delinquencies.

This service might also be made available to farmers on a contractual basis, upon their application and for a fee, regardless of whether they are borrowers under the Agricultural Credit Agency. Where farmers are unable to manage and operate their farms because of illness, accident, or location of their work, or where the farmer dies unexpectedly, leaving his property in the hands of a widow, minor children, or relatives with no farming interest or

experience, it would be of great benefit to them as well as to the farming community if a trustworthy farm management service could be called upon to make proper arrangements and act in an advisory capacity, or, beyond that, temporarily take over the management in trust for the client.

This service could also be used by the credit agencies as a protective device to stave off the threat of insolvency and the borrower's loss of equity. The establishment of such professional aid or supervision would in all cases require the consent of the borrower, but it would enable the creditor agency to attempt the rescue of a debtor before it is too late to save him. Competent professional managers on the staff of this division should acquire experience that would be superior to that of many individual farm operators.

This service should supplement but not replace the services now made available to clients by private professional farm management companies. Such private farm management services are available at present only in a few areas, chiefly in the Mississippi Valley.

The wider availability of such services which could be provided by the Agricultural Credit Agency would be likely to popularize the use of professional farm management services, and to increase the demand for them while also tending to improve the standards of such services where they are performed by private companies. Arrangements of this kind have a long and successful history in some of the foreign countries.

Another very important purpose of this service agency would be that of providing facilities for handling foreclosed farm properties held by the Liquidation Division (described in a later section). Whenever the Liquidation Division wishes to rent, operate, subdivide, or sell farm real estate, it could obtain the necessary professional service from the Farm Management Section, which in turn would make an equitable charge for its services.

The Section for Cooperative Management, Service, Audits, and Examinations

The business done by agricultural cooperative associations is expanding and gaining strength. A considerable part of the publicly sponsored agricultural credit system is designed for supplying the cooperative associations with credit. The success or failure of a farmers' cooperative association depends largely on the efficiency of its business management. Hence success in supplying the as-

sociation with capital for investment in facilities or for operations depends also on the competence of its management.

Since the management of these associations presents many problems that are different from those of private corporations or other forms of enterprise, it is recommended that the Research and Service Division maintain a special section which will make available to cooperative associations its counsel and analytical services on management problems.[24] A fee should be charged for such service. When a unit of the credit agency requests such service, it should bear the cost If, on the other hand, the request arises from the association, it would be expected to pay for the service provided.

This section should be kept small but efficient, and ready to act wherever the help needed cannot be obtained from other sources such as the land grant colleges and the agricultural extension services.

The same section should serve as an auditing and examining agency for cooperative associations. This service would be rendered at the option of the associations. The aggregate revenues from fees charged should cover the costs, but fees should be equalized to some extent so as to avoid extreme costs to individual associations in distant locations.

The Statistical Section

This section would assemble and coordinate the statistics needed by the central agency and by the district units, except for those which could be more efficiently and conveniently handled in the districts. It would also prepare the more general reports and summaries, except those directly required of the operating units or most readily assembled by them.

Statistics relating to production, prices, stocks held, wage rates, mortgage debt, land values, etc., which are derived from many sources and appear in a variety of forms, would be brought together and presented in such form as to be of use to the operating units. At present this kind of service appears to be more widely scattered than is desirable and could be provided better and at less cost by such a central unit.

Obviously the district units should have freedom to develop

[24] This would be substantially in line with many of the activities now carried on by the Cooperative Research and Service Division of the Farm Credit Administration.

locally such statistical service as they feel is needed and worth while. The aim would be to improve the service to them in a way which would result in their choosing to use the central service for those activities which could be carried on more economically and effectively in that way.

Since this would be, in effect, a cooperative service arrangement for the various district and national units, its cost should be borne by them on an equitable basis with appropriate allocation of costs as between the cooperative and direct loan units of the system. Since the various units would be carrying the main expense of the service, they should, of course, have a direct voice in deciding on the amounts and kinds of such work to be carried on. Suggestion has not been made as to the specific mechanism by which such participation in these decisions would be made as this probably could be handled better through relatively informal arrangements than through any prescribed mechanism. It should also be recognized that changes such as those proposed here and elsewhere in this part of the report, if undertaken, should be made gradually and to some extent experimentally. Consolidations not found workable or economical should, of course, be abandoned.

The Research Section

For checking on the performance and status of the whole agricultural credit system, to keep well informed on the economic situation and the environment in which the system has to operate, and to improve its performance in behalf of agriculture, the administrators need an active research unit. This section should be one of the most important parts of the Research and Service Division. It would carry on research chiefly of three types:

(a) Studies pertaining to the system as a whole, requested by the Governor or the Advisory Board.
(b) Studies requested by the various units of the agency as an aid in their operations.
(c) Studies of the organization and management of cooperative associations requested by them or by the Governor, the Advisory Board, or a Deputy Governor.

For research specifically requested by them, the costs should be charged to the particular units or cooperative associations making the request. Research undertaken on the initiative of the Ad-

visory Board, the Governor, or a Deputy Governor, should be paid for out of public appropriations set up for this purpose.

While it is vital that the research section be staffed with research personnel of the highest caliber and be kept at a high level of efficiency, it should avoid encroaching upon the domain of other established government research agencies in a way that would lead to duplication or wasteful competition. Research relating to agricultural credit in general and to the general problems of agricultural cooperatives, should in the main, be left to the Bureau of Agricultural Economics. The emphasis in using the resources of the research section of the Research and Service Division should be put upon types of research intended to contribute to efficiency in the operations of the agricultural credit agency.

The development of a strong research unit should not mean excessive centralization of such work in the national office though much of it could undoubtedly be performed more efficiently there than in the districts, since more specialization would be possible. It would be wasteful for each district to attempt to have highly specialized personnel in the various types of research. There should, of course, be opportunity for the district units to maintain such research activities relating to their regional problems as they feel to be warranted. The maintenance of a close contact with the district boards should, however, be a continuous concern of the central research agency with a view to meeting as fully and as economically as possible the needs of these units, both by efficient, practical work in the central agency and by giving technical aid and encouragement in such research activities as the districts choose to set up locally.

The Information and Education Section

To discharge the responsibility assigned to him by the Congress of keeping the public informed about pertinent developments in the field of agricultural credit and agricultural cooperation, and of making education on such subjects available to farmers, it is necessary that the Governor of the Agricultural Credit Agency have suitable facilities for rendering this service. It is suggested that a special section of the Research and Service Division be set up to provide this service and that the costs be carried at public expense from appropriations specifically provided for that purpose. This section

should not, however, be used in ways which would result in shifting to it expenses which would normally be a part of the regular operating expenses of the operating units.

The Liquidation Division of the Federal Farm Loan Corporation

In a nationwide banking organization with so complex a structure as the present Farm Credit Administration, any changes in its organization create as a by-product the need for liquidating certain branches or agencies. The fact that these are in most cases recipients of private or public funds and at the same time have a creditor position, and the fact that they conduct a contractual type of business covering long periods of time, make such liquidation a more formidable task than is the case for many governmental administrative agencies.

At present there are in the Farm Credit Administration certain units in liquidation, several of them having been so for many years. Because the period of liquidation was extended, the consolidations motivating the decision to liquidate have been postponed, leaving behind a structure which is more complex and costly than before.

The suggested organizational changes would necessitate liquidation of several units of the present system. It is recommended, therefore, that there be set up within the Federal Farm Loan Corporation a special Liquidation Division charged with the responsibility of winding up, in as short a time as practical after such consolidations are authorized, the financial and legal affairs of all units and funds which are to be discontinued, of transferring their loans as rapidly as practical to the new agencies, and of holding in trust their assets and capital until such liquidation is carried through.

Among the agencies and funds thus to be administered are:

1. The Agricultural Marketing Act Revolving Fund.
2. The joint stock land banks.
3. The Crop and Feed Loan Division of the Farm Credit Administration.
4. The Regional Agricultural Credit Corporation of Washington, D.C., and its branches.
5. The loans and assets of the Tenant-Purchase Division of the Farmers' Home Administration.
6. The loans and assets of the Rehabilitation Division of the Farmers' Home Administration.

7. The assets of the 12 production credit corporations.
8. The loans and assets of the 12 intermediate credit banks.
9. The loans and assets of the Central Bank for Cooperatives.

The Liquidation Division of the Federal Farm Loan Corporation should also be authorized to take title to, and administer and dispose of, assets and collateral acquired by the various units in executions against insolvent debtors wherever such disposal appears to be the most efficient and economical way of handling them. Such transfers should be in accordance with procedures agreed to by the various units of the system and designed to provide liquidation through those channels where it can be handled most effectively. In most cases the unit holding the loan would handle the property for a time with a view to working out the problem. If it becomes evident that the property should be held for some time or if it could be better handled by personnel specialized in liquidation procedures, it could be transferred to the Liquidation Division. In acquiring such properties the Federal Farm Loan Corporation should take them over at appraised values in keeping with what they would be expected to yield net to the Corporation, but not less than what could be obtained for them in the market at the time title transfer is made. The Corporation should be obligated to pay, out of the net profits on liquidations of a given class, a dividend to the agencies or units from which such properties were transferred. Such dividends or profits would be credited to the respective insurance funds from which the losses had been made up.

In some cases it might be found mutually advantageous for the Liquidation Division to arrange with specific lending units to handle local arrangements. However, under the plan proposed the various lending units would keep their books relatively free of assets of uncertain value, and management and disposal would be placed in the hands of personnel specialized in that function. Where the property consists of foreclosed farm lands, actual management of the properties would usually be assigned to the farm management unit in the Research and Service Division, but the ownership would be held by the Liquidation Division since this requires corporate structure.

At present it is common practice in the Farm Credit Administration for the federal land banks and the banks for cooperatives to handle such acquired collateral individually. This procedure has

several disadvantages. By accumulating such assets, the value of which may still further decline, the institution loses financial strength, particularly if foreclosures show a heavy regional concentration. Often the lending agencies are tempted to hold such property for many years, even at high expense, because they expect eventually to recover the initial loss. It is much more important to the welfare of agriculture, however, that the credit agencies remain, even in a severe depression, in such a strong position that they strengthen the confidence of the public at times when it might otherwise be weakened. The credit agencies should be able to clear their books of such losses quickly without unloading the distressed property acquired on to an already glutted market. To write off such losses at once is a better policy than to throw "good money after bad," particularly if provision is made for sharing in the potential gains made in liquidating the properties. In the real estate market, such treatment of foreclosed property would have a salutary effect, because the Liquidation Division would retain it in quarantine until such time as the demand revives.

The Liquidation Divison should avail itself of the service of the farm management section of the Research and Service Division, and should avoid building up a farm management staff of its own.

If, as recommended, the liquidation of discontinued branches of the agricultural credit organization is limited to a relatively short period, that part of the Liquidation Division concerned with these transfers should soon shrink to a small skeleton staff. The other branch, dealing with the liquidation of foreclosed real estate and other collateral, would operate with a very small staff so long as the foreclosure rate was low, but if a major depression occurred this branch would need to expand its staff in accordance with the greater volume of business.

THE FEDERALLY SPONSORED CREDIT SERVICES TO AMERICAN AGRICULTURE

E. OTHER TYPES OF LOANS AND SERVICES THAT MIGHT BE BROUGHT INTO A COORDINATED AGRICULTURAL CREDIT SYSTEM[25]

The Government has made provision in special acts for a variety of loans for agricultural purposes which might well be reviewed as

[25] Presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947, by William G. Murray. (Several of the more general problems of agricultural credit are discussed in this section of the committee's report, but for reasons of economy in space are omitted from this presentation.)

to their relation to a well-coordinated over-all program. In most cases these were provided as a means of implementing programs in which purposes other than that of providing credit were dominant. Many of the agencies are cooperative in type but were not brought into the cooperative credit system, possibly because the legislation setting up the Cooperative Credit System did not contemplate loans of these kinds, or because the agencies were initiated before the banks for cooperatives were created, or, in some cases, because it was the desire of the Congress to provide subsidies in the form of special concessions in the rate of interest. The rural electrification service falls in this class. Others are the loans made by the Reclamation Service and loans by the Reconstruction Finance Corporation for refinancing irrigation districts.

It is evident that there may be Congressional objection to bringing these into a more general agricultural credit program There are, however, sufficient indications of possible advantage in such consolidations to make it desirable that they be considered by the credit agencies and the Congress. After the initial period of development it is likely that the strictly credit functions involved can be handled better and more economically by agencies specializing in credit management.

Irrigation and Reclamation District Loans

During the 1930's many irrigation and drainage districts were refinanced through loans from the Reconstruction Finance Corporation. As a whole this procedure appears to have been a constructive step which helped to rehabilitate many districts without entailing any undue burden on the federal treasury Many of these loans will run for long periods before final payment. Another type of loan on water facilities, that to mutual water companies, is now being provided by the banks for cooperatives, apparently in a very satisfactory way.

It would appear that some study might well be given to the possible advantages of bringing all such loans into a single program handled by the banks for cooperatives. The irrigation and drainage districts are, in effect, large-scale cooperative agencies. Legally, however, they have more of the characteristics of a governmental unit than of a cooperative association.

It would seem that the most workable solution, if such a plan were considered, would be for the R.F.C. to continue to provide

funds as at present, and to use the banks for cooperatives as its agents in supervising and servicing the loans.

Rural Electrification Loans

There would apparently be some advantages in bringing the rural electrification loans into the regular cooperative bank sytem of financing. If such a loan, once the association has been established, could be transferred to a regular financing agency, the funds of the Rural Electrification Administration would be freed for more rapid extension of the system. Whatever write-down of investment might be necessary to make loans of this kind acceptable to the banks for cooperatives would in any event have to be borne by the public in one form or another, through direct subsidy, subsidized interest rate, or eventual write-down of principal. It might be as well, therefore, to write it off at the time of transferring the loan. There appears to be no merit in a long-continued and indefinite subsidy in the form of an interest rate below that of the competitive market.

There are undoubtedly some technical advantages in keeping together the engineering, promotional, and financing activities of the rural electrification cooperatives. It is believed, however, that these advantages, with respect to financing, will become relatively less important as these organizations become better established. The possibilities for more specialized financial service, and for economy in servicing the loans would seem to warrant study and consultation between officials of the Farm Credit Agency and those of the Rural Electrification Administration.

Reclamation Service Financing

There has long been recognition of certain difficulties arising where the government is both operator of a reclamation district and creditor of the farmers served by the district. Extreme and sometimes unwarranted pressures arise for blanket adjustments. There would seem to be merit in separating the engineering phases of these projects from the long-term credit operations relating to the individual farms.

It is suggested, therefore, that there be a careful study of the possibility of establishing individual financial responsibilities in land purchase in such districts and that, if practical, these be converted to individual mortgages and handled by the regular credit

agencies. It is apparent that such a program would imply changes in legislation and that there may be compelling reasons against it. Hence the suggestion is merely that it be given study.

Credit for Forest Production and Operation

The suggestions made above relate to types of credit that are now being provided by the Government. There are in addition certain other fields in which credit is not now provided, but where some provision of credit is needed. The largest and most significant unserved field of that kind is forestry.

There is evident need for more orderly methods of financing forest holdings, and for policies in forest finance which will encourage better forest practice and the conservation of forest resources. This is especially true for the small and medium sized holdings and operations where the financing procedures of large corporations cannot be used. The small and medium sized owners and operators are not able to reach the money markets by issuing their own bonds and often cannot borrow under other arrangements for long enough periods or at low enough rates of interest. Because of this there is a marked tendency for holders of these forest resources to be induced or forced into hasty liquidation, and for them to forego the slower but more desirable practices of orderly cutting and maintenance of the resource.

The committee did not undertake detailed study of the forest credit problem. The problem, however, is of sufficient importance and urgency to warrant the setting up of a special committee to undertake the formulation of plans appropriate for meeting the need for credit of this kind.[26]

Farm Home and Land Improvement Loans

There is need for study of possible ways to stimulate the improvement both of farm homes and farm lands. The capital accumulations of the United States are now so vast that there will be a continuing problem of finding outlets for accumulated savings. In part these should go into improved rural homes. There are certain barriers to such use, however. Among them are the individual farmer's need for additional operating capital in his business, the fact that

[26] Such a committee has been set up since this report was written. It has completed its study, and its report has been mimeographed and circulated in preliminary and confidential form.

a loan for home improvement cannot be made without mortgaging the farm as a whole, and the lack of adequate architectural aid and craftsman services.

Some of these functions are not well suited to a credit agency. However, since improvements of this type would add markedly to the nation's cultural assets and could provide needed occupation for labor and capital in depression periods, study may well be given to arrangements whereby loans for these purposes, associated with grants of a part of the cost might be made. This would channel investment into those lines where the greatest social values would accrue instead of into increased land values which do not add to the welfare of the farm population.

During the past decade the Federal Government has given considerable encouragement to the construction of urban homes. The insured loans extended through the Federal Housing Administration and handled through the commerical banks have had a wholesome influence upon urban real estate credit and upon standards of construction for urban homes. In the period following the immediate postwar boom, strong efforts will undoubtedly be made by the Federal Government to stimulate investment in both urban and rural housing.

In many areas of the United States the condition of farm buildings, in general, and of farm homes in particular is far below what the yield of the land justifies.

This situation no doubt has its roots partly in the low standards of dwelling to which farm owners and operators have become accustomed. It seems evident however, that the initiation of a constructive loan policy for farm building improvement could be one of the means of facilitating a decided improvement in rural housing and of lifting the average level of farm buildings.

A constructive building and loan policy would consist of something more than merely offering farmers five- to ten-year loans for whatever they want to build. The lending agency, for example, would take steps to encourage the most economical kinds of repair, remodeling, and new construction in farm buildings of a type and design that would substantially improve the service to be derived from them, would reduce maintenance costs, and would enhance the value of the property and of the rural community.

Loans for such purposes should be made according to certain rules consistent with that sort of policy, and with a proper and crit-

ical use of information on the earning capacity of the farm as determined by the appraisal service. Terms of the loan, as well as its size, should be decided with special emphasis on the durability and quality of the improvement.

Loans for these purposes should be extended for as much as 18 years. They should normally be amortized within the term, but in cases where they are safe, flat loans could also be permitted.

Such loans should be contingent upon earnings by the farm adequate to repay them without jeopardizing the basic financial situation of the farm. This implies that they would need to be deferrable under certain conditions. Such a plan is not without precedent, particularly in the British arrangements for aid to farmers in improving the housing for their employees.

Somewhat similar arrangements might well be considered for certain types of soil improvement such as liming, fertilizer applications, drainage, check dams, and similar improvements not likely to be made unless special stimuli are provided. Such a plan could be used in place of the current soil conservation payments in a way to encourage more discriminating use of such funds and to avoid wasteful practices in their administration.

Such plans as are here contemplated would no doubt require specialized divisions in the credit agency and would require very careful definition of policies by the Congress. Technical assistance, for example in housing, would need to be supplied by suitable agencies such as the Housing Administration. Granting these safeguards, such plans could go far to raise the level of rural living and to provide constructive outlets for capital and labor. They would amount, in effect, to lowering the marginal cost for some of the most desirable types of investment.

Providing Services to Non-Borrowers

The provision of credit for agriculture creates a need for certain related activities. Appraisals must be made, titles must be examined, some farms must be taken over and managed until sold. In some cases audits must be made and accounting systems set up.

For credit supplied by individuals and the smaller private credit agencies, these services are usually obtained from privately owned, specialized agencies furnishing the services on a fee basis. The larger private credit agencies are tending more and more to build up their own service divisions and holding corporations to provide

services of this kind. The purposes have been to secure the services at lower cost and to provide for themselves services better suited to their needs.

Question has frequently been raised as to whether organizations such as the Farm Credit Administration and the Farmers' Home Administration should not consider some further developments along those lines, both as an economy in their own operations and possibly as a means to broader public service. Some of the functions such as appraisal are usually handled by the agency extending credit, but in most cases such services have not been available to non-borrowers. Title insurance, auditing, and similar functions more generally have remained as a field for specialized private agencies.

Two principal problems of policy are presented; one, how far should the federal agricultural credit agencies go in providing such services for themselves? Two, should they make services of this kind available to non-borrowers? The comparable viewpoint in private credit operations, with regard to servicing their own loans, would undoubtedly be to set up their own services if they felt the service could be provided more economically or could be done better, assuming that these gains were large enough to warrant the trouble, expense, and risk entailed. Few of the private credit agencies have undertaken, however, to provide any services of this kind to non-borrowers.

If it is found that such services could be established practically, it would seem best to confine them for the present to properties on which the agency expects to make loans. It is conceivable, however, that once in full operation they could become a more general public service on a fee basis. It is to be expected that such a plan would meet considerable opposition from established service agencies. It seems likely, however, that general sentiment would favor it since there is a widespread feeling that some of these services, such as title insurance, tend to be monopolized and that charges are unwarrantedly high.

Such services should not be undertaken unless there are prospects for substantial savings or of marked improvement in service. The responsibilities of the governmental credit organizations are already large and diverse, and should not be added to unless there is a clear prospect of public advantage in so doing.

A controlled and competent appraisal service was recognized as a

necessity from the first. The other functions mentioned present less clear-cut advantages. Nevertheless, the needs for improved service and the volume of operations have grown to an extent that warrants rather general review of the possible advantages in developing internally some of these services.

The question of extending such services to non-borrowers presents a number of additional problems. There is no merit in providing a service through governmental channels as an end in itself. Where a service is available privately on a reasonably adequate basis and at costs not substantially higher than those likely to result from supplying it through governmental agencies, it should not be undertaken by them. Study of each function should include consideration of the possibility that the private offering could, with suitable encouragement and cooperation from the public agencies, be made more comprehensive and satisfactory. Nevertheless, where it is evident that private agencies do not or cannot meet the needs of the public adequately, the public agencies should consider seriously the provision of needed services closely related to the function of supplying credit.

In the realm of land appraisal there is evident need for a better source of information to prospective buyers and sellers than now exists. There seems no prospect that this need can or will be met in all areas by private agencies. The major question is whether it can be provided practically by the government agencies and without dangers to them that offset its advantages to the public. For auditing and accounting there are involved both matters of cost and possibility of better service. In the management of foreclosed farms and the provision of management aid to borrowers, there is room for more constructive action and possibly a need for services not now available through either private or public agencies.

In title insurance the problem turns mainly on cost of service. The insurance of land titles constitutes a relatively large item of cost in real-estate loans. The business of providing title search and insurance is tightly held and in the opinion of many the charges are higher than they need to be. It is evident that individuals and agencies handling small numbers of loans cannot afford to assume the risk of guaranteeing titles. It would appear, however, that the land bank system is now large enough and sufficiently wide in its coverage to be able to assume risks of this kind.

It is suggested that careful study be given to the possibility of

establishing a land title service and handling for its units the insurance of such titles. Presumably such service would have to be provided on a flat fee basis, but probably could be provided at substantially less than is now charged by title searchers and title insurance companies. If so, this would provide in the cooperative credit system an additional saving to borrowers. Special consideration should be given to the possibility of foregoing in areas characterized by small loans some of the more expensive protective arrangements such as title search and professional inspection. The establishment of insurance funds to meet such losses as might occur would very possibly be a cheaper procedure than the one now used. In this case a fee could still be charged, out of which the insurance charge would be paid. Inspection and report would be made by a local director or other representative of the association. The saving thus achieved might be sufficient to make many of the associations handling small loans self-supporting without incurring excessive risks.

A regular title insurance service would be more costly at the beginning than after a considerable body of title records had been built up. It might have to operate at a loss for a time. The plan should not be undertaken unless a study of it indicates possibilities of a rather substantial saving to borrowers.

DISCUSSION*

FRANK PECK
Farm Foundation

First, I should like to say I think the Committee of Economists engaged by the Governor of the Farm Credit Administration to examine the existing organization and to make recommendations for improving the Farm Credit system, has done a thorough and generally a commendable job. Those of us who have been close to Farm Credit realize that no one should expect any reorganization plan to be simple, because the organization, with its multiple functions, is exceedingly complex.

One cannot quarrel with the philosophy and ideology of Dr. Brandt in his outline of objectives and general policies and purposes of a federally sponsored Farm Credit system. His paper properly attempts to place safeguards against soft credit and emphasizes the need of sound business but provides for unsound loans and grants in actual practice. He expresses hopes that adequate supervision will minimize the dangers involved in the latter activities.

* A discussion presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

Emphasis is placed upon the recommended close coordination between various types of loans, implying, for example, that direct loan borrowers will transfer to the cooperative system when their equities permit. To induce such transfers the author recommends a higher interest rate for direct loans to marginal borrowers who cannot qualify for cooperative loans. This is contrary to the past experience, in which Congress has indicated its desire to lower the interest rate for those who cannot meet sound banking requirements. Perhaps Congress will change its previous ideas in this connection.

Emphasis is placed upon the savings that will result from the operations of the reorganized plan as contrasted with existing experience. One would need a detailed cost analysis of both systems for comparative purposes before being too certain of this so-called advantage. I have noted reorganizations of various institutions in the past with this motive as an objective, but the evidences of economy have not been too prominent.

A great deal is expected of the chief administrator and his associates in the proposed plan. It is not easy to run a business institution and a relief agency at the same time. In theory it appears practicable, but in practice the omnipotent government is so strongly in the picture as to cast lengthening shadows over the administration of the system.

How to reconcile the objectives Mr. Brandt so ably presents with the obvious necessity of reducing the numbers of farmers and how to avoid encouraging more marginal producers on marginal land is not too clear. He advises against it but if Congress approves, it will be done by our agency. The problem is recognized, and a rather clear picture drawn of what has happened in the past, but the assurance that history will not repeat itself in this connection, cannot be made certain.

The Proposed Plan

It is perhaps natural that I should be interested first and concerned most with the administration of any reorganization plan. It is in this area that organizations largely succeed or fail. The various levels of administrative responsibility in any large far-flung national institution, particularly if complicated by governmental relations, regulations, directives, and changing influences, require that very great emphasis be placed upon high calibre and capacity in the fields of policy making, administration, and operating personnel. The government cannot always command this.

At the national level, the plan, at first glance, appears to be especially complicated with the discount bank at headquarters, with the continuation of the federal farm mortgage corporation, with the new Federal Farm Loan Corporation and its liquidation section, with the public appraisal service and the proposed farm management service. I am sure important questions center around these features of the plan. For example, repeating the second mortgage experiences with the Federal Farm Mortgage Corporation is not particularly attractive to those who went through the previous experiences. Any standby skeleton section of an organization waiting for pressing emergencies presents difficult administrative problems. I have not seen many government skeletons that did not get fat. The description of

assigned functions of the Federal Farm Loan Corporation does not clearly indicate lines and degrees of authority or stress the complexity of the relationships involved.

I am in accord with the proposed over-all advisory board and the method suggested for selecting the governor and his associates. I see no objection to the development of the district agricultural bank for first mortgage real estate loans and production loans, and possibly the cooperatives could be served under one administrator as a department of the district agricultural bank. I would concur with the principle of keeping the direct loans entirely separate from the cooperative system but the public is not likely to differentiate between the two.

At the district level the coordinating committee and the advisory committee for direct loans tend to decentralize responsibilities, as all committees do, and in some responsibilities they likely would muddy the water more than they clear it, but at least for the sake of appearing to stimulate coordination, it may be necessary though I doubt it. If coordination is made a part of the responsibilities of the chief administrative officer or officers under the district boards, the results ought to be effective. I am constitutionally opposed to committees where they possibly can be avoided.

The lines of authority need to be carefully worked out in the plan and I can see some objection on the part of the district boards with respect to some of the functions outlined for the Federal Farm Loan Corporation and its liquidation section. It is difficult to clearly understand the proposal without more detail of administrative responsibilities.

I have no objection to a public appraisal system as recommended, although its maintenance on a fee basis with its staff subject to varying demands for miscellaneous types of services aside from land bank and production credit appraisals, greatly complicates its most effective administration. I did have objection, while connected with the land bank system, to having land bank appraisers, as such, assume responsibilities for private appraisals under the then existing form of administration. I am not too sure now of this feature of the plan.

I have more questions about the effectiveness and administration of the proposed farm management service section than I have about the appraisals. The description of services looks fairly well on paper and in theory, but operating such a service on a fee basis and correlating an efficient staff with varying demands and still preventing overlapping with extension workers and with professional farm managers, present real administrative problems.

The borrowers' stock changeover to a membership basis will bother some people, but I see no objection to it. In fact, there are distinct advantages from an operating standpoint and on the part of borrowers. The objective of "producer owned and controlled" has been overworked from a stock-ownership standpoint. Granted that investment in stock may stimulate interest in support of an institution the resultant equity and its control counterpart can be obtained through reserves and retained patronage refunds. If membership relations are properly developed and maintained, a membership fee carries the same degree of control as stock ownership.

Some of my cooperative friends may disagree. The problem will center on having the substitute method clearly understood inasmuch as it involves the establishment of the complicated insurance proposal and requires an added increment to the interest rate. Whether or not this change would have any adverse effect upon bond and debenture sales may be questioned, but I would doubt it.

The point also might be made by land bank borrowers that the government presently has no capital in the system, that it is completely owned by the associations, and as owners, therefore, they are the ones to really decide, perhaps, if this particular part of the plan is acceptable.

Aside from this, of course, there are always many practical problems in a program of liquidation, elimination of employees and changes in responsibilities, and were the plan to be adopted I presume a transition period would be needed in order to avoid serious complications.

DISCUSSION*

R. I. NOWELL
Equitable Life Assurance Society

At the outset let it be clear that we favor the cooperative idea. In fact I could hardly do otherwise because the Equitable Society is one of the largest and most successful cooperatives in the nation. All of its $4,324,000,000 of assets are owned by approximately 3,700,000 policyholders. All income from our business after deducting expenses and necessary reserves is returned annually to policyholders. I believe there is plenty of room in this country for both a Federally sponsored cooperative system and a private system of farm mortgage credit—that both will profit from competition afforded by the other, and that farmers and the general public will also benefit. In order to make the competition fair, however, it is essential that the federal system be stripped of all subsidies and made to stand squarely on its own feet. It was tough going for private lending organizations in the years 1935 to 1944 when Congress appropriated $270 million to maintain an artificially low interest rate of 3½ percent. The use of Commissioner money from 1933 to June, 1947 gave Federal land banks an unfair advantage when competing with private agencies in principal amounts.

Both of these items now have been eliminated, but the Production Credit System in the short-term loan field still has the unfair advantage of large amounts of Federal capital. It is also in order to point out that Federal capital, which the land banks have returned to the Treasury, is held in an earmarked fund and is subject to recall by the Farm Credit Administration as capital stock and paid in surplus of the banks without further act of Congress. These funds amounting to $314 million give the banks an unfair competitive advantage in their current operations. I think this fund should be abolished, and if at some future date the land banks need additional capital, Congress should then take a fresh look at their operations. If these

* A discussion presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

earmarked funds were abolished, I suspect it would have significant influence on the banks' policies with respect to dividends and the granting of extensions to delinquent borrowers.

Since these papers were written, the land banks like everyone else in the mortgage business have experienced a squeeze between rising costs of doing business and a reduction in their gross earnings. Costs of obtaining mortgage business, including salaries, travelling expenses, supplies, etc., are sharply higher. Competition has become increasingly intense and farmers have reduced their land bank loans from $1,200,000,000 in January, 1945 to $976,000,000 as of January, 1947. Some reductions in personnel and other economies have been made but they fall far short of the adjustments needed. Instead of making adequate adjustments, the system has preferred to put on a strong drive for new business. Commissioner money has been used freely as a device for making bigger loans and outbidding conservative lenders. Dr. Brandt and Dr. Benedict seem to assume that the Commissioner money was a standby device for refinancing in periods of depression, and to be used very sparingly for the purchase of new farms in times of prosperity. Actually for the fiscal year ending June 30, 1946, 53% of all loans made by the system were joint Commissioner-Land Bank loans, or Commissioner first mortgage loans.

I agree substantially with Dr. Brandt's statement of principles. I like his suggestion that "the credit organization should operate according to good business principles and should reduce costs to that minimum which is consistent with maintenance of the service desired." Also, "The interest rate of a direct loan should be somewhat higher than on a cooperative loan in order to encourage graduation into the regular cooperative or private lending systems as soon as the borrower can qualify." By contrast to this very sound statement of policy, I should like to mention the direct loans of the Government under the tenant purchase program, which are written for a 40 year term at a 3% rate. When these loans are reduced to conservative limits, there is no incentive, in fact, there is a penalty if the borrower wishes to refinance his loan with a cooperative or private agency. Had these loans been written at a 4½% rate, many of the borrowers could now refinance at a saving of interest and thus permit the return to the Treasury of the Federal capital involved.

Dr. Brandt makes an excellent point when he states, "it should be made clear that the Government will not come to the rescue of creditors who have ignored public warning of excessive commitments by lenders and borrowers and have by their reckless lending caused or contributed to the insolvency of their clients." If a strong warning of this character were issued now by the Farm Credit Administration, it might act as a sobering influence on many private agencies who are now making wild loans.

Dr. Brandt urges that "Government guaranties should be used as sparingly as possible since these are likely to lead to less careful administration of the system and may involve the Federal Treasury in large and unpredictable losses." In this connection I am reminded of the current operation of the GI Bill of Rights, under which the Government insures private lenders making 100% loans to the extent of 50% of the loan or $4,000,

whichever is smaller. As this program is now operated, lenders look only to their own safety and regard the guarantee as a $4,000 cushion. No one considers seriously the veterans ability to repay the loan, the inflation in land values being caused by the program or the eventual loss to the Treasury. I think this program should be abolished or that lenders be made to share 50–50 with the Government in all losses incurred. Only an administrative ruling is required to make this change and it would definitely stop the foolishness now going on.

Dr. Brandt suggests that "Commissioner type loans are necessary in cases where the property is not eligible for a loan from the cooperative system because the operator is a part-time farmer, or there is some other condition that prevents his getting a regular land bank loan." Since the Commissioner now has gone out of business, I think the land bank should make provision for handling such cases. It is my understanding that the land bank is prevented from making part-time loans only by an administrative ruling issued in 1933. This was an unproven field at that time and to be on the conservative side the Governor preferred to let the Commissioner handle these loans. The Equitable Society and several other insurance companies are now actively soliciting this type of business, and there is no reason why the land banks could not also enter the field on a conservative basis.

In discussing the rehabilitation type loans, Dr. Brandt suggests there should be no pressure applied to put out specific amounts of money in each area. His point is well taken. I remember vividly the high pressure methods used in the early Resettlement Administration days to get money committed by states on some pattern preconceived in Washington, which paid little or no consideration to the true needs of the localities involved. At this point I would also suggest that all personnel dealing with rehabilitation loans be selected on a non-political basis. Too often in the past allotments of funds by states and loan approvals at the county level were not made free of political considerations.

Dr. Brandt's paper contains many other excellent policy suggestions, but I come now to the organizational proposals presented in Dr. Benedict's paper. I think the simplifications proposed are in the right direction, but hardly go far enough. As the Committee suggests, there is a tremendous amount of excess machinery and waste motion in the present set-up. If the Federal credit system is to survive without subsidies, it must rid itself of the barnacles of superfluous organization and functions. To use a good Anglo-Saxon word, they must get down to an "austerity" program if they are to meet modern competition.

As an example of modern competition in the farm mortgage field, I might mention The Equitable Society's Approved Mortgage Plan, which results in a pooling of facilities of commercial banks and the Society for extending long-term credit to farmers. Other insurance companies, recognizing the advantages of the arrangement quickly copied the plan. Today there are at least 5 different companies operating in the field and the Equitable alone has over 1,100 bank contracts. Under this plan a farmer can go to his local bank and get credit from 40 days to 40 years with an absolute minimum of

red tape and delay. Neither does he have to travel to an adjoining county because of his local Association having been consolidated. It is not at all uncommon for a farmer to make application for a long-term farm mortgage and have the funds disbursed by the bank within 3 or 4 days. Short-term production loans are committed by the bank in the barnyard. By contrast the service rendered by some of the land banks is relatively inferior. Farmers seeking credit through Federal sources are frequently pushed around and referred to several different offices before they finally get attention. Such delays and mistreatment are, of course, the source of criticism and result in loss of patronage.

As a means of further simplifying the system I would suggest that the District Banks for Cooperatives be abolished and their lending functions transferred to the proposed District Agricultural Bank. As I see it, there is no reason why a vice president of the District Agricultural Bank could not handle all loans to cooperatives.

I agree that the direct loan program should be kept separate, administratively, from the cooperative credit system. However, I should like to see closer coordination between the two on the county level. As a minimum, I would suggest that the Agricultural Credit Association and the County Administrator be housed in the same building. I would further suggest that the local representative of the District Agricultural Bank be permitted to interview all applicants first and that only those who could not qualify for Land Bank loans be referred to the County Administrator of direct loans. Unless this is done, there is bound to be rivalry between the two units and personnel of the direct loan program will solicit business that might very well be handled with regular Land Bank loans.

The Committee must have had its collective tongue in its cheek when it set up the block in the organization chart for a State Administrator of direct loans. For economy reasons the state office obviously should be abolished but they know from experience that this is politically impossible.

Now that the authority of the Federal Farm Mortgage Corporation to make Commissioner loans has expired, I think it should be abolished. Let its assets be returned to the Treasury and applied to reduction of the national debt. All functions which the Committee has assigned to the Federal Farm Mortgage Corporation could very well be performed by the Agricultural Discount Bank.

The Committee recommends that the Advisory Board on the national level be given a small staff for research work. This I believe to be unnecessary expense and duplication of the facilities of the Research Division. I would prefer to see the Advisory Board given only an Executive Secretary and authority to call on the Research Division for any special analysis or reports it might require.

I do not follow the Committee in their proposal to transfer all foreclosed real estate from the District Agricultural Banks to the Liquidation Section of the Federal Farm Loan Corporation. I would prefer to make the Banks and the local Secretary-Treasurers struggle with their own liquidation program. I think there is no better disciplinary procedure than to have a

loan man made responsible for collecting delinquent loans he or an associate has placed on the books, and if foreclosure is necessary, to manage and eventually sell the property. This is a very sobering experience and will make loan men much more alert to the hazards of their profession than they otherwise would be. Furthermore, to transfer such assets to the Liquidation Corporation immediately upon acquiring them would result in dissipating the banks' capital. If they were permitted to carry their real estate over a period of years, they would have a much better opportunity of recovering their original investment. It has been our experience that when a separate organization has the sole function of liquidation they become "professional" at getting the job done regardless of the recovery. A professional salesman generally measures his success in terms of volume rather than quality of sales.

I come now to the most important recommendation of this Committee, the proposal to eliminate the land bank stock and substitute therefore a simple cooperative membership with an insurance fund collected through an increase in the interest rate. The stock purchase requirement is, of course, a very serious handicap to the land bank system in the present highly competitive market. They cannot hope to obtain a fair share of the available conservative business as long as a 5% stock purchase is required. I think the Committee's plan to establish the insurance fund on three levels is very ingenious. This puts the responsibility substantially where it belongs and it would seem to safeguard the local associations against becoming impaired by forces beyond their control. When the Committee decided that ½ of 1% would provide sufficient reserves against losses, the land banks were still making their loans on the basis of 50% of the normal agricultural value of the land, plus 20% of the value of the buildings. On this basis loans averaged about 43% of the normal agricultural value of the farm. Since then Congress has authorized the banks to increase their loans to 65% of the normal agricultural value. Quite obviously the banks are now assuming greatly increased risks, and applications to the insurance fund at a rate of ½% as suggested by the Committee would be entirely inadequate.

Albert S. Goss, formerly Land Bank Commissioner, writing in the *National Grange Monthly* of October, 1946, had the following to say with respect to losses at different loan ratios: "The history of the Federal Land Bank indicates, that over 30 years it has cost approximately 1 per cent to administer a 50% loan to pay the losses. While tests have been somewhat meager, the general result has indicated that the losses on a 65% loan have been approximately 300% greater than on a 50% loan, while the losses on a 75% loan have been approximately 600% greater." While Mr. Goss' loss figures seem inordinately high, his position is supported in part by data recently prepared for Congress by the Farm Credit Administration. It reports that actual losses on Commissioner loans have averaged .83% annually and would amount to 1.22% if reserves for loans now on the books are included. These losses have been incurred on a rising price level and would probably be much greater in a period of more stable values. To

insure against losses on loans ranging from 65% to 75% the Farm Credit Administration proposed an insurance fund, to be subsidized at the outset by $83 million of Federal capital and to this would be added 1% annually on all loans outstanding within this ratio bracket. To provide proper reserves for 65% land bank loans in lieu of the 5% stock subscription now required, I think there should be credited to the insurance fund an amount not less than 1% per annum and possibly 1¼% would be required. The exact amount of course can only be determined after careful analysis of their actual loss experience. In setting up a new system of this kind it is better that the rates be set too high rather than too low at the outset.

DISCUSSION*

H. B. MUNGER
Farm Credit Administration

It is in no way the fault of the persons whose papers I am to discuss that I had not received two of them before coming to this meeting. I have had an opportunity, however, of briefly studying the report on which the papers are based, and I shall comment upon some features of that report relating to those agencies forming the "cooperative" part of our farm credit system.

It seems to me that all of us interested in a better farm credit system are indebted to this committee of five for the study they have given this subject. It is a highly controversial one. But from thought, discussion and sincerity of purpose comes progress, and I want to see progress toward an even better credit service for farmers.

Available time is short and I shall not speak of the many parts of the report with which I concur: that the system should be truly cooperative in structure; that it should be self-supporting; that it should decentralize responsibility; that the coop system should provide leadership in better credit service to farmers; that it should provide keen but fair competition to other lenders in the farm field. Many other constructive and sound statements of principle and procedure are presented in this report.

My time before this group should be given to parts of the report which in my mind should be questioned as to principle or are untimely in their application.

It is recommended that the 12 Intermediate Credit Banks be liquidated and that there be one government capitalized discount bank in Washington with 12 branches serving the districts. Such a step completely removes policy control of the discount bank from the district Farm Credit boards and centralizes all authority in Washington. While loans would be made in the districts, policies and regulations would come from Washington. The supply of money would be turned on and off from Washington—this is a "cooperative" credit system.

From such a set-up it is but a short step to getting our loanable funds

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* A discussion presented at the annual meeting of the American Farm Economic Association, Green Lake, Wisconsin, September 9, 1947.

direct from the U. S. Treasury instead of by sale of securities in the investment market. Such an idea is already in the minds of some people. Nothing would kill our cooperative credit system more quickly. Good sound business farmers will not support a system that runs to the Treasury for its money or in which all policy decisions are made by a super-authority.

It is suggested that the 12 P.C.C.'s be liquidated and that supervision of P.C.A.'s be taken over by the District Agricultural Banks. The most important function of the District Agricultural Banks, I believe, will be the present functions of the land banks—i.e., supervising the N.F.L.A.'s and making long term mortgage loans. If it is proper for the District Agricultural Banks to supervise the N.F.L.A.'s and also provide the loanable funds for them, it seems logical that, having the supervision they should also supply P.C.A.'s with short term money. If the District Agricultural Bank is to have P.C.A. supervision I see no reason for a separate discount bank either in Washington or in the districts.

An unfortunate fact in the present organization of the production credit system is that the corporations have no earning assets. Their capital is owned by the U. S. Treasury and is invested in government bonds, the income of which pays the operating costs of the corporations in their supervision of P.C.A.'s. Such costs, in the proposal, would be transferred to the District Agricultural Banks, yet I see no plan for compensating the banks for a service which now costs the production credit corporations one and one-half million dollars annually. Obviously, a part of the income derived from mortgage lending by the banks which are now completely owned by the N.F.L.A.'s should not be used for supervision of the P.C.A.'s.

The report suggests that certain services be added to those we now have in the farm credit system and I should like to comment on two of them. It is said that a staff, especially trained in farm management, would be helpful in connection with the weaker loans and might prevent many foreclosure cases. Such a service would necessarily originate at the district headquarters and would no doubt add to the present overhead cost of operation.

Real estate acquired by the banks would be placed under the direction of these professional farm managers until sold. But farms not sold relatively soon would be turned over to the Liquidation Division of the Federal Farm Loan Corporation. This liquidating service unit especially trained in that function, would supposedly do a better job than the cooperative credit agency that made the original loan and finally acquired the property. I cannot agree that such a conclusion is correct. But assuming it to be true, the fundamental objection, to the farm management service and the liquidation service as they apply to cooperative credit is that they lead us in the direction of more concentration of authority at the district and national levels. The production credit system, since its organization, has been decentralizing more and more responsibility to the associations. The land bank system has been heading definitely in that direction during the last few years, recognizing that a better job can be done locally if authority and responsibility are placed in a high-class board of directors.

Sound, successful, well-trained farmer-directors are most fundamental to

a successful cooperative credit system. Knowing the local people and knowing the farms they can keep more of their members from serious difficulties than can professional farm management folks sent out from district headquarters. And in the case of acquirement of property and its liquidation, who is in better position than the directors and their employed personnel to lease or operate, make necessary repairs and finally arrange the terms of sale of the property. The district agencies will always be of great help to the associations through advice and counsel, but the decisions and responsibilities for them had better rest in a capable, well trained board of directors of the local association.

The committee properly recognizes that interest charged to members should be high enough to cover not only operating costs but also losses. It is suggested that uniform interest be charged, high enough to cover losses in high risk areas, and that patronage refunds to members be made in the lower risk areas.

There seems to me no reason why interest rates to farmers should be the same throughout the country or within a state. Risk is but one factor affecting the cost of retailing money. Others are the size of loans and the density of farms in the area served. Certainly in the case of short-term loans, local boards of directors might properly initiate a rate of interest which would permit a spread sufficient to pay operating expenses, including losses. I would permit variable interest rates as between P.C.A.'s to be determined by local boards of directors. It seems consistent with the philosophy we talk so much about—local ownership, control and responsibility.

The four permanent district corporations—The Land Bank, the Intermediate Credit Bank, the Production Credit Corporation, and the Bank for Cooperatives together with N.F.L.A.'s and P.C.A.'s—which we think of as the cooperative credit system, have been operating for a period of 15 to 30 years. They have rendered inestimable service to thousands of our good farm folks. I doubt if there is sound reason for a general overhauling of the corporate set-up of these agencies at this time.

Such reorganization would be instituted at a time when important changes are being completed in the relationship of N.F.L.A.'s to the land banks. Decentralization of responsibilities in the making and servicing of mortgage loans is now being effected. Still further effort in this direction is contemplated by the banks as the associations are prepared to accept the responsibility.

P.C.A.'s have substantial farmer-owned capital and accumulated earnings—both amounting to more than the government invested capital. The farmers own the major part of the business. There is enthusiasm among the directors and members to own it outright. They are repaying government capital each year. Many associations have programs to increase their farmer-owned capital and the response of members in purchasing it has been splendid.

Major changes in the set-up of the district units with attendant changes in personnel cannot but retard the programs of decentralization with the

N.F.L.A.'s and of farmer-ownership with the P.C.A.'s. Farmers are likely to face difficult times ahead, and credit agencies will not wish to be in a period of reorganization when such times come. Our best efforts should be used at this time to strengthen the associations so they may carry greater responsibility in the operation of the business.

It seems to me a great deal may be done to improve our farm credit system without any changes in our legal set-up. The committee suggests—and properly so, I think—a closer relation between the long term and the short term credit agencies so that farmers may go to one office for their credit needs and get the service from one person. Changes in the law are not necessary to accomplish that objective. Furthermore, such a program might not be the best in every part of the United States. In our district there are about 60 offices set up through the cooperation of P.C.A.'s and N.F.L.A.'s where farmers go for both types of credit. One person is usually the secretary of both associations and other personnel do both types of work. Such an arrangement makes sense to the farmer, and association boards of directors like it. Not all of them work perfectly. We have our problems of smooth operation, the main one being to get competent personnel. Getting the right kind of folks solves most of the difficulties.

Our Land Bank and Production Credit Corporation are working closely together in supervising these joint association set-ups.We are experimenting with joint-field accountant service and joint supervision of other activities. None of it is forced on anyone by law or edict. If it doesn't work, we'll change back to our former organization. If it works others may wish to try. Conditions are different in different districts of our country. I cite this as an example of what may be done to accomplish one of the things the committee proposes. I believe there are situations where our coordination program would not be acceptable to farmers and stockmen. I should dislike to see it forced on them thru legislation.

I do not wish to be understood as being opposed to any legislation whatever, in relation to improving the farm credit system. I fully concur with the committee in its recommendation that provision should be made for borrowing cooperatives to own the Banks for Cooperatives. Legislation is necessary to make this possible. Similar legislation is needed to make it possible for P.C.A.'s to own the Intermediate Credit Banks and take them out of the position of wholly-owned government corporations.

I would like to see N.F.L.A.'s have broader authority and responsibility in the making of real estate mortgage loans. If legislation is necessary to bring that about, I should favor it. It should be permissive legislation and the authority should be delegated to associations that are qualified to accept it.

Eventually, it seems to me the P.C.C.'s and the F.I.C.B.'s might be combined to form an institution that would supervise and provide funds for P.C.A.'s, just as the land bank does for N.F.L.A.'s. There would be some economy in such a step, and it would remove the present difficulty of the corporations having to rely on the income of government capital for their support.

DISCUSSION

WILLIAM L. CAVERT
Farm Credit Administration

To begin with, two questions may be raised in regard to this report:

1. Is the committee thinking in terms of the American farmer as the backbone of our system of free enterprise, a man of independence, not seeking favors for himself and not readily granting them to others, or is the committee willing to encourage an attitude among farmers of dependence on Government for their well-being?
2. As regards Farm Credit, does the committee go along with the administrators of the Farm Credit Administration in seeking to develop a cooperative system of farm credit—not in name only, but one in which there is pride of ownership and active participation by members? If so, then the proposals affecting the Farm Credit Administration should be judged according to this standard. In general, is not the assigning of a miscellaneous group of governmental chores to the Farm Credit units likely to foster the idea that they are essentially units of government rather than independent cooperatives?

The following are comments on specific proposals of the committee:

The proposal that the banks for cooperatives act as agents for the RFC in administering irrigation and drainage district loans. Since irrigation and drainage districts are units of government, their work is only distantly related to the objectives of the banks for cooperatives. The proposal that the banks for cooperatives finance REA associations. The major objection to this proposal is that the REA type of cooperative, at least up to the present, is quite different from the type financed by the banks for cooperatives in which the borrowing cooperators are expected to supply a substantial amount of equity capital. Bringing the REA into the set-up of the banks for cooperatives would work toward the idea of keeping the banks for cooperatives as governmental agencies rather than toward the aspiration of cooperative leaders to develop a bank system that belongs to them rather than to the government. This reviewer is in agreement with the committee that, as a matter of principle, it is desirable to segregate the financing function from the promotion, engineering and administrative functions but, as just indicated, it would be difficult to fit the present REA set-up into borrower owned banks for cooperatives.

Farm Home and Land Improvement Loans.

The committee apparently assumes that the major reason for lack of better rural housing is lack of readily available credit and that the farmer should look to government for aid. This reviewer is not impressed with the argument that lack of credit is an explanation for the low standard of rural housing in certain areas. The reasons that seem much more important are:

1. The lack of income to support the good housing desired. In general, subsidized credit for housing will tend to retard realistic adjustments, such as consolidation of farm units, and, in some cases abandonment

of lands marginal for crop agriculture in favor of forestry and recreation.

2. The farmer does not always agree with his governmental and collegiate advisors as to his most important needs. The farmer, as do economists, has an income that is much less than adequate to satisfy his numerous desires and happily in our economy it is up to him to decide how to use his limited income. Probably, it is desirable that many farmers should devote more of their income to housing. If so, representatives of educational institutions should be among the foremost in their confidence that a desirable way to achieve this is through educational processes. In general, the farmer will acquire all the debts that he can handle without governmental encouragement.

The proposal for government aid in technical services in connection with housing could, perhaps, be much better handled, too, by the education process. Governmental bureaus may be able to put out some good educational bulletins, but any service that they provide for individuals is likely to be very costly and of doubtful efficiency.

A much more promising approach is that now being used by several colleges of providing frequent short courses and other educational aids for rural builders.

The suggestion is offered by the committee that a program of making loans on farm houses might be formulated in which the house would be detached from the other security. Perhaps the net effect of this in many areas of modest productivity would be to largely eliminate real estate mortgages secured by land, as in areas of modest productivity a real estate mortgage without buildings may not offer much security to the creditor.

Proposals for an appraisal service and for title insurance.

The committee suggests that the land banks might conveniently do several chores in addition to their regular job of providing real estate credit on a cooperative basis, such as providing an agricultural appraisal service and a title insurance service. Again, the criterion suggested is to measure each of these proposals upon the basis of whether it will further the development of a cooperative system in which the responsibility for the administration of the system is progressively accepted by borrowers. As regards a public land appraisal system, it is the belief of this reviewer that if the users are to pay the cost, it would have far less use than its sponsors believe.

Farm debt adjustment proposals:

The fundamental question in connection with a permanent set-up for debt adjustment is whether such a system can be a part of the permanent set-up without weakening the will of debtors to pay when circumstances arise which make debt payment a real job. It is obvious that the maintenance of a low cost cooperative system must have as a part of its background a belief that a debt is a sacred obligation rather than something to be adjusted when circumstances make the going a bit rough. Perhaps, if a real emergency should arise, it would not take long with the experience that

we had in the 1930's to devise and set up a system suited to the particular situation.

To sum up, again the viewpoint on these questions will depend on:

1. Whether one is a vigorous exponent of a maximum amount of free enterprise in both one's own line of business and in other lines, or whether one is willing to lean heavily on Government.
2. If it is decided that such services as appraisals, title insurance and others are needed, the question arises as to what present or new agency should administer them. As regards assigning additional jobs to the Farm Credit Administration, if one views the development of cooperatives that shoulder responsibilities as the goal, these additional jobs should not be assigned to the Farm Credit Administration unless they are in line with the major objective.

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